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EDITED BY

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AND

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Editorial

With the third year of warfare it is now possible to take a glance at the field of medicine and surgery and to visualize the directions in which research is developing. It is gratifying to note that official medicine has assumed responsibilities in a manner which did not obtain during the last war, where research into clinical problems followed only tardily the urgent demand and at considerable disadvantage. In this war the Medical Research Council has preferred to anticipate problems rather than to wait for them to arise, and by means of a number of important committees and sub-committees many urgent medical and physiological problems are being studied. We see signs of the same preparedness in the United States where the American Medical Association have issued a most excellent but terribly painful *War Medicine* devoted to those very problems which are part of the daily work of medical officers in the Services.

Many of the present-day problems are traumatological, and to-day we find ourselves in a much stronger position than twenty-five years ago in respect of such fundamental questions as the prevention of sepsis and the management of shock. The use of the sulphonamide class of drugs is in many ways revolutionary, and we are obviously not yet in sight of the limits of their scope. We can also take pride in an organization for the storage of blood and dried serum which is far in advance of the last war practice. More recent methods of the immobilization of fractured limbs promise to be of value in the management of the wounded, especially where early transportation or evacuation become necessary. There have of course been unexpected features in the present wartime medicine. If we have so far been spared the experience of gas casualties, we have been confronted with something new in the way of injury from the blast of high explosives—and a velocity unknown a quarter of a century ago. We may be thankful too that we have as yet encountered but little in the way of serious epidemic disorder, and here again experience suggests that the course of some zymotic affections can be drastically shortened by the use of sulphonamides. Whether our good fortune will continue in respect of this relative freedom from acute infection is perhaps too much to expect.

In modern warfare there are of course numerous factors to contend

[illegible] Thus we must cope with the hazards of [illegible] attempt upon mechanized warfare rapid [illegible] equipment the risks attendant upon [illegible] kind of atmospheric and climatic [illegible] ups which it may follow the tactic restriction [illegible] field work in the problems of group intelli[illegible] candidates must submit for [illegible]

[illegible] is really a wide range of interests [illegible] should find no difficulty in picking [illegible] problems. Even if in a small way [illegible] contribute something of interest and [illegible] medicine and surgery. [illegible] from a peacetime [illegible] to confirm [illegible] something which he can [illegible] advantage.

The Naval Service during war has always held out an ample field for observation but the reapers have now been many and the gleaners but few. There are also few inducements to engage a man to study amidst the tumult and bustle of a sea life. The mind ought to be secure of its tranquility when it gives full scope to its reflections and the fight of an enemy in the approach of a gale of wind are so many interruptions to a train of thought that it requires a degree of apathy not often met with in the literary character to rally in pleasure. These words are as true to day as they were when originally penned in 1799 by T. Trotter Physician to the Fleet nevertheless the wartime exigencies did not prevent him from writing at the same time his classic "Medicina Nautica."

It is just for such reasons that the JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE can be looked upon at the present time as an exponent of wartime medicine which is to do with close interest in quarters far beyond the confines of the Service. Within its pages are recorded the clinical experiences great and small encountered by the medical officers of a fighting Service which has been working at continual and unremitting pressure for two and a half years.

Like all other periodicals the Journal has been considerably affected by the shortage of paper and difficulties in the printing trade. For these reasons certain changes in the format have become unavoidable. Unfortunately it has been necessary to omit altogether the reproduction of the Admiralty orders. Moreover changes in the type have been made and the margins contracted upon so as to accommodate more words to a page. By such means it has been possible to continue the publication of a journal in which there has been no curtailment of medical matter whether in the form of original articles or case reports.

The Journal has also suffered unduly from rapid editorial changes. Surgeon Captain Danson's scholarly pen was laid aside and Surgeon Captain Gimlette was the succeeding editor for a short while. Following that officer's appointment abroad the joint editorship has fallen to Surgeon Captain Macdonald Critchley R.N.V.R.

Articles.

WAR BURNS

A Survey of Their Treatment and Results in a Hundred Cases

By Surgeon Commander A. Ian L. Maitland, R.N.
Late Royal Naval Burns Hospital

(Received for publication August 1941.)

From [illegible] it is clear that it is not be who [illegible] within the [illegible] that whereas [illegible] that [illegible] 1493

Historical Introduction

Incendiary and [illegible] as well as burns injuries has been [illegible] since early times. [illegible] Pliny [illegible] through the centuries the struggle [illegible] burns of [illegible] the direction of the [illegible] Hippocrates [1] Aetius [2] and Sarganis [3] all said local [illegible] the tissue [illegible] the reaction which [illegible] two kinds [illegible] existing, [illegible] or not [illegible] the hopeless [illegible] Paré [illegible] Ambroise Paré [illegible] used similar [illegible] (circa 1600). No general treatment [illegible] the frequency of burns [illegible] in these writings [illegible] is probable that such injuries [illegible] a month until after the introduction of gunpowder.

They were certainly frequent in the naval warfare of the early seventeenth century. In John Woodall [6] a naval surgeon of that time, gives detailed instructions for their treatment. His local applications do not differ from those of the ancients—oil and water, [illegible] quinces as an astringent and cerussa refrigerans Galeni—to make it more easy for suppuration and melsupinis—for pain and vicious humours. His general measures are far ahead of his time—abstain from purging potions and the like—first—while he further adds that the injured man must have a good diet. Sir Gilbert Blane [7] while serving in H.M.S. *Formidable* Rodney's flagship in 1782 remarked that burns were common in the naval actions of the time. They resulted from cartridges catching fire from the careless handling of the powder burns used in priming the guns and the areas involved must have been large as gunners then fought stripped to the waist. In a case dated 1798 Trotter [8] describes the treatment with an unspecified oil of a man injured in such an accident. He was burned over the face, shoulders and chest. He lost both arms as a result of lacerations and fractures, one at the shoulder and the other from below the elbow. He recovered and received a pension of twenty pounds annually for his disability.

Up to the latter part of the nineteenth century local applications continued

[illegible] the [illegible] with the addition of [illegible] agent. In 1887 [illegible] Billroth is quoted by [illegible] results [illegible] concession and the [illegible] Whitla [illegible] of fluid [illegible] water [illegible] have been employed [illegible] and Dan [illegible] method [illegible] controlled [illegible]

About the [illegible] aseptic [illegible] at Kiel. In this [illegible] method has [illegible] has been assumed [illegible] advance made possible [illegible] skin grafting [illegible] Hamilton in 1854 [14] and subsequently improved [illegible] Thiersch [15]. Towards the end of this [illegible] local scaling agent (Thiery [16] Power [17]) but owing to the danger of toxic reactions when applied to large areas it never achieved great popularity except as a first-aid measure.

In the war of 1914-18 burns due to flash back and earthe fires were common, however little change in the local applications took place. Picric acid was used as a first-aid dressing and wax reappeared in favour as 'ambrine' [18] and paraffin wax No. 7 [19]. It is thus clear that the local methods of sealing the burn employed at the end of the last war differed only slightly from those in use in ancient times. These differences were the origin of the wax employed and the aseptic method of application. They did differ greatly, however, in the results obtained by the late treatment with extensive skin grafting, which was highly developed by Gillies [20] and others. This produced a great improvement in functional and prosthetic results.

In 1925 Davidson [21] described what appears to have been a hitherto unknown method of local sealing by tannic acid and from that date the modern treatment of burns has developed. Tannic acid solved the problem of stopping the great loss of fluid from the burned surface and greatly reduced the mortality, but it did not always prevent infection. Little was known about the bacteriology of burns until Ahlfeld [22] published his study of the subject in 1933. He found that all severe burns were infected after twelve to eighteen hours with the beta hæmolytic or gamma streptococcus. A. Christchurch in 1912 [23] had shown gentian violet to be a specific antiseptic for Gram positive organisms and as it has analgesic properties as well Ahlfeld employed this dyeing with good effect. In a subsequent paper [24] he, dealing with the subject, he describes the use of the triple dye [1] having found that Gram negative organisms are contaminants at a later stage in treatment. At the same time the adoption of 10 per cent silver nitrate solution with 5 per cent tannic acid (Bettman [25]) had improved the results of tanning by producing a thinner and more pliable coagulum. These two procedures have now been satisfactorily combined in the present-day tanning technique is described in the E.M.S. Memorandum [26] and elsewhere [27].

[1] 1,000 neutral acriflavine, 1 per cent crystal violet and 1 per cent brilliant green equal parts of each.

This [illegible] fulfils to a high degree the aims of m[illegible] first the reduction of shock [illegible] and the prevention of fluid loss As the [illegible] mentioned is efficiently overcome burns will [illegible] quickly

Coincident with this great improvement in local applications the immediate problems of general treatment have been clarified This has taken place principally through the work of Wilson [28] and his colleagues in Edinburgh Underhill [29] and his associates and Davidson [30] in America The principal directions which have emerged are the necessity to make up the fluid loss by intravenous injections of plasma or glucose as well as ordinary anti shock measures and the judicious use of eucortone [31] coupled with

TABLE I

		Treatment					Complications			
Degree	Infection	Late suturing	Tannic acid	Miscellaneous	Total	Due to explosion	Due to burn	Average number of days sick	Result
First	—	—	—	Flavine oil 4 Vaseline 1	5	Wounds 4 Headache 1	—	29	Good
Second	—	14	5	Footle 11 Saline 6 Various oils 4 Antiseptic 1		Blast chest 9 Ruptured eardrum 1 Ruptured eardrum 3 Loss of hall 1 Wounds and fractures 4	Boils 4 Albuminuria 1 Pyrexia 1 Contracture 6	41	Good
Third	—	7	4	Cod liver oil 2 Permanganate 1 Footle 2	16	Blast chest 1 Fractured humerus 1	Boils 4 Contractures 8 Hypersensitive 2 Photophobia 2 Sudeck's atrophy 1	58	Good
Second	Yes	6	6	Footle 1 Boracic 1	14	Blast chest 1 Ruptured eardrum 1	Boils 2 Cellulitis 1 Vasomotor defect 2	69	Good 1
Third	Yes	10	—	—	10	Blast chest 6 Compression fracture of the spine 1	Contractures 9 Contractures 2 Contracture 1 Contracture 1 Loss of nails 1 Hypersensitive 2 Sudeck's atrophy 1	108	Good 5 Fair 5
Third	Yes	12		—	12	—	Cutaneous ulcer 1 Contractures 4 Loss of nails 2 Hypersensitive 5 Sudeck's atrophy 4 Contractures 4	118	Good 5 Fair 4 Poor 2 Bad 1
Fourth	Yes	1	—	—	1	—	Contractures	350+	Still under treatment

the stopping [illegible] from the burned surface by coagulation [illegible]

The [illegible] of the aeroplane and the inflammable nature [illegible] in a place of high importance in modern [illegible] Very little [illegible] from those men in the civil practice of peace [illegible] severity and as a result dissatisfaction [illegible] hitherto found adequate. This paper [illegible] flames of controversy but is simply a [illegible] on one hundred cases all but one of [illegible] in a Royal Naval Auxiliary Hospital [illegible] undertaken elsewhere and usually [illegible] peculiar to naval warfare

In this series [illegible] exceptions the thermal injury has fallen with greatest severity on the [illegible] face and ears and the chest in all, with the exception [illegible] and scalds has been bomb or shell flash [illegible] how the relative details and the treatment [illegible] with the [illegible] given within twenty four [illegible] the injury [illegible] complications have been grouped under two heads [illegible] would thus be obtained. The term "good [illegible] has been [illegible] cases which on discharge had recovered full [illegible] to return to full duty when the new skin [illegible] function between 50 and 80 per cent [illegible] regarded as bad. The Dupuytren's classification [illegible] and the use of the term "infected" [illegible] taken from the granulating wound [illegible] have been tabulated in Table II. The figures

[illegible] II.—[illegible]

[illegible]	[illegible]	[illegible]	In d	Infected [illegible]	Infected [illegible]	Infected fourth	Total
[illegible]	[illegible]	[illegible]	1	1	1	—	11
[illegible]	[illegible]	[illegible]	1	1	1	—	25
[illegible]	[illegible]	—	1	1	[illegible]	1	14
[illegible]	[illegible]	[illegible]	[illegible]	1	7	—	23
[illegible]	[illegible]	1	[illegible]	1	5	—	11
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5% 9 5–10% 8 10–15% 1 15–20% 2 80% 1	16
[illegible]	[illegible]	[illegible]	1	11	22	1	101

[illegible] percentages for compactness as [illegible]

have been further [illegible] under their respective [illegible] an accurate picture of the size and severity of the lesions in [illegible]

General Treatment

(Diet Vitamins Encortone and Rehabilitation)

The general treatment given in this Hospital has been on similar lines to those described by Cohen [32] A diet rich in first class protein is essential from the start as a considerable loss of weight occurs even when the area burned is small the fluid balance should be charted the urine examined daily during the first week and the abundant fluid intake required made a vehicle for pushing glucose At the beginning of the series six patients were tested for deficiency in vitamin C In three cases the results were within normal limits the others showed definite deficiency one requiring ten days to reach saturation and the remaining two nine days In view of these results 50 mg of ascorbic acid were given daily as a routine to all cases Since the publication by Hunt [33] of his paper on the role this vitamin plays in wound healing the dose has been increased to 100 mg daily in all severe cases Vitamins A and D are also given in the form of two dessertspoonfuls of cod liver oil and malt extract daily Sulphanilamide and similar drugs have not been given orally as a routine but have been reserved for cases in which evidence of cellulitis presented By this means complications in the physiology of a full diet are avoided and the patient can be given all forms of protein from the start The patients are nursed in Fowler's position with the hands elevated on a pillow in front of them to prevent congestion and encourage spontaneous drainage This position is also well suited in the nursing of respiratory complications when present while without much effort in interest can be taken in the surroundings and some reading done with the aid of a book rest

Most of the cases were injured a day or two before arrival and shock when present has been of a secondary nature As a result in three cases only was encortone used and in all three it marked a turning point in the illness in two it was given for secondary shock and in one for late sepsis with grave toxæmia The dosage employed was small 1 c c twice daily for two four and three days respectively These three cases were apathetic with rapid pulse rates and severe shock and when the drug was started their lives were despaired of Whether as a result of its use or from other causes the apathy passed the pulse rate dropped general betterment began following its administration and in two of the cases the ultimate recovery is credited to it

In the later stages fresh air sunshine patient encouragement and physiotherapy all take their place in rehabilitation The last method is of great help in mobilizing scar tissue and the liberal use of lanolin with gentle massage over the new skin has been in all cases the initial treatment Supervised active exercises from the earliest possible moment are accompanied by the playing of darts and ball games the latter begin with a tennis ball and as movements and proficiency return progress to a smaller size of ball is made. These have been the routine procedures adopted Manipulations or passive movements have only been used in an endeavour to overcome fixed contractures and then rarely The reason for this conservatism is the frequency of Sudeck's atrophy as in the presence of this condition it is easy

[illegible] with a resulting permanent [illegible] the circulation has been [illegible] [illegible] [illegible]

for a further three days. If one such course is not [illegible] a clean and satisfactory surface for grafting it is repeated [illegible] covered with Thiersch grafts stitched to the edges and the [illegible] turbed on a splint for from seven to ten days.

The third method is late tanning (Mutless [illegible]). [illegible] have been treated in this way four of them in this Hospital. [illegible] tabulated in detail in Table III. It will be seen that this [illegible]

TABLE III.—LATE TANNING

Degree	No.	Details		Remarks	
Second	[illegible]	2 days after	1		
		* 3 days after	1		
		Twice treated no dates	1		
Third	4	24 hours after	2		Good
		2 days after several times after	1		
		Not mentioned	1		
Infected Second	6	24 hours after	1	All cases had efficient [illegible] the eschar below [illegible]	Good
		* 3 days after	1		
		* 6 days after	1		
		* 8 days after	1		
		9 days after	1		
		Not mentioned	1		
Infected Third	12	2 days after	3	All cases [illegible]	
		6 days after	1		
		8 days after	1		
		3 days after	1	Skin grafting [illegible]	
		8 days after	2		
		8 and 14 days after	1		
		1 and 10 days after	1	In all cases the [illegible]	
		10, 14 and 16 days after	1		
		9 and 15 days after	1		

This shows the [illegible]
The cases treated [illegible]

good in the absence of infection, or when the infection has been [illegible] early dealt with before tanning. When this has not been done and in infected third degree burns they have not been so satisfactory. In the latter category only five cases gave good results and it is felt that these would not have been obtained if other methods had not been applied. There is no doubt however that in suitable cases this method may be of great value, as the following case will show.

B 73.—Aged 20. Second degree burn [illegible] and treated by Joule. All the burns [illegible] this was

[illegible] shock [illegible] [illegible] [illegible]

changes which must be assumed to be present in the tissues In these cases the thermal injury is of such severity that all the layers of the epidermis are destroyed and it is therefore reasonable to assume that some degree of thermal damage also exists in the deeper structures in particular those elements which have a poor blood supply Superimposed on this dead and devitalized tissue there is an infection sometimes severe and always various of which the common contaminants in this series have been the beta haemolytic streptococcus *Staphylococcus aureus* and *Bacillus coli communis* This infection produces a destruction of the dermis comparable to that produced primarily in a fourth degree burn

Bearing these things in mind it is easier to understand how the crippling effects of this injury begin and design the treatment to combat them The latter to be successful must be directed first to the prevention of infection both at the time of the injury and later second in the rapid removal of dead tissue third to the covering as quickly as possible of the exposed structures with skin and lastly with the restoration of function The cases in this group were on the average three weeks old on arrival and as a rule the measures taken had to be designed to eradicate an already established infection This was not easy and various methods were tried successfully before a satisfactory routine was developed The one finally adopted is the second method described under facial treatment

The results obtained in this group cannot be regarded as satisfactory only in ten cases did full functional recovery take place in another nine a fair recovery of movements was achieved of the remaining three two were poor and one bad The worst results were found in the group of cases treated by late tanning In some instances this had been repeated more than once with effects which are shown by the increased frequency of severe local sepsis In three of these cases primary grafting even of the Reverdin type would not take and the subsequent scars were keloid in type and required much hard work in the physiotherapy department with secondary prosthesis before satisfactory function returned

It is also possible that in some of the cases classified as fair results on discharge further contractures may have appeared and this would mean that later they would have been reclassified as bad

In view of the danger of superimposed infection there is no doubt that when a burn is of the third degree and situated on the hands or face a method other than tannic acid coagulation must be employed if better results are to be obtained It is unlikely however that in actual practice such treatment could be successfully employed *ab initio* but better results might be obtained by a routine on the following lines

As first aid treatment and for the first few days the repeated application of the triple dye Heggie's[1] jelly [37] euflavine [38] on gauze under will

[1] Heggie's jelly —

Tannic acid	20 per cent	Soluble thymol	2 grm
Euflavine sulphate	0 1	Glycerin	100 cc
Procaine	2	Cod liver oil	10 cc
Polyvinyl co	7	Kaolin	80 grm
Glycerin	10		
Distilled water ad	100		

[illegible] the double purpose of cleaning the area and preventing [illegible] At the end of seven days the dressing is then changed [illegible] encouraged to separate by the use of 5 or 10 per cent solution [illegible] Bunyan Standard bags or even excision if considered [illegible] as soon as separation has occurred and a negative culture [illegible] the area should be covered with Thiersch grafts stitched in [illegible] ing if necessary the whole dorsum of each finger. Small meks [illegible] placed in the graft here and there to allow the escape of any discharge and the hand placed on a plaster splint for seven days during the period preceding grafting gentle active movements should be encouraged in an endeavour to stimulate the flow of lymph through the fingers and prevent adhesions in joints and synovial sheaths. By this means it should be possible to have the burned area covered by epithelium in the same time as a second degree burn with a return to full function in a much shorter period. There is no doubt that if infection could be reduced to the minimum at the beginning, a percentage entirely the need for such complicated procedures would not arise and further experiment with the basic dyes either alone or in combination with saline solutions may prove to be the answer to this problem.

Complications

(Blast Chest, General, Ophthalmic and Local Sequelæ)

For ease and clarity of consideration the complications have been divided into four groups. Those resulting directly from the explosion and those peculiar to the burn. The commonest and most important condition in the first group is blast chest. 14 cases these have been fully reported elsewhere by my medical colleagues [39]. It is important to recognize this condition [illegible] intubation in the use of inhalation anæsthesia and for this [illegible] anæsthetic of choice in this series has been intravenous pentothal. [illegible] has worked admirably although occasional difficulty and in one case [illegible] has been experienced in finding a suitable vein. The other lesions [illegible] Ruptured eardrums five cases, multiple wounds and fractures [illegible] cases and one case each of post concussional headache, loss of [illegible] compression fracture of the spine these have all been treated on [illegible] lines. It is interesting to note that in a series in which almost half [illegible] could be grouped as extensive psychical complications were rare [illegible] few cases apprehension at the approach of enemy aircraft was [illegible] for a short period after the injury but only two cases developed [illegible] anxiety state.

[illegible] second group fall a number of isolated conditions. Albuminuria [illegible] toxic myocarditis and focal arthritis. Generalized furunculosis [illegible] in three cases however in none was it possible to demonstrate [illegible] other than general debility with loss of weight. In one case dyspeptic [illegible] preceded a careful investigation failed to demonstrate any objective [illegible] of peptic ulcer and he had had no previous history. Despite the [illegible] this be has been regarded as a probable Curling's ulcer.

Of the ophthalmic lesions twenty two cases had a persistent con-

[illegible] the most recent information has reached me that one further case [illegible] since for which he was invalided

[illegible] in his case [illegible] in his case [illegible] in the R.A.F. [illegible] [illegible] [illegible]

illustrated. The [illegible] tures of the hand [illegible] in this figure we [illegible] epithelialized [illegible] still under treatment. The [illegible] developed the [illegible] the first five were distinguished three with [illegible] with good function before the importance of [illegible] was realized. They may have

[illegible]

[illegible]

required [illegible] The treated cases were discharged [illegible] good function [illegible] and should eventually achieve a fair result.

Vasomotor [illegible] infection with its attendant swelling under the eschar [illegible] the loss of all the nails in three cases and gangrene with [illegible] amputation. The tip of a finger in another case [illegible] cases [illegible] upset was observed. In three of them hyperidrosis (excessive [illegible]) and Sudeck's atrophy of the bones of the hand

were found to [illegible] the remaining six four [illegible] and two had [illegible] The hypertrophy [illegible] disappeared with [illegible] arterial vascularity [illegible] The bone [illegible] still present on discharge [illegible] disuse phenomena [illegible] disappears in the [illegible] function [illegible] and 4 show the changes in this [illegible]

[illegible] Smith [illegible]

FIG. [illegible] Smith [illegible] [illegible] normal [illegible] normal [illegible] the right [illegible] pure [illegible]

fingers covered by [illegible] skin are characteristic. [illegible] this appearance is usually associated with congestion of the grafts. The [illegible] in the hands are found at the [illegible] of the phalanges and [illegible] considerable; they are most [illegible] risk in the terminal phalanges. Since these changes occur [illegible] of the tendons in the hand, their prevention could easily be [illegible] by [illegible] manipulation.

SUMMARY

(1) From a historical survey of the treatment of burns it appears that the principal advances have been the introduction of the aseptic technique, skin grafting, the application of tannic acid to the scaling of the burn, the gradual appreciation of the principles of general treatment and the realization of the importance of infection.

(2) A detailed review of one hundred cases has been presented. These have been tabulated to show the severity of the thermal injury in relation to the presence of infection and the area involved.

(3) The late treatment and results have been detailed and the points which have emerged may be summarized thus: (*a*) All cases of first second and third degree burns which remain clean (63 per cent.) have given good functional results. (*b*) Infected second degree burns (14 per cent.) have done likewise but in a slightly longer time. (*c*) These results appear to be obtainable irrespective of the type of primary treatment employed. (*d*) Infected third degree burns have only given satisfactory results when vigorous late treatment has been used.

(4) A survey has been made of the final results achieved in twenty seven cases treated by late treatment.

(5) A [illegible] treatment is outlined for the better exclusion of infection in infected burns.

(6) A [illegible] is described in which crystal violet solution, sulphapyridine [illegible] powder have been employed together with good effect in [illegible] of [illegible].

(7) The [illegible] of the precaution of infection, early skin grafting and [illegible] exercise from the earliest convenient time have all been stressed.

(8) The complications observed in the series have been recorded and in [illegible] of the hand the clinical picture illustrated and the treatment [illegible] described in detail. The occurrence of visual defects after severe burns of the eyelids has been noted and it is hoped that a more detailed [illegible] will be made of these effects in any future casualties.

Lastly and by inclusion I should like to record my admiration for the excellent primary treatment of these cases by medical officers in H.M. Ships and R.N. Sick Quarters. In the absence of this high standard results such as those shown above would have been unobtainable in our burns.

Acknowledgments are due to Surgeon Rear Admiral F. J. Gowans, C.B., for his permission to publish this review of results obtained in cases under his care, and to my colleagues for their help last summer at a time when only team work could surmount the work in these cases. I am indebted to Surgeon Commander A. R. Thomas, R.N.V.R., for the radiographs and photographs used in the illustrations.

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CHRONIC MENINGOCOCCAL BACTERÆMIA

A Review of the Literature together with a Clinical Account of Five Cases met with in a Hospital Ship

By Surgeon Lieutenant Commander C Astley Clarke M D M R C P R N V R

Cerebrospinal fever is much the commonest manifestation of meningococcal infection This illness begins with an invasion of the blood-stream however once the meninges have been attacked the resulting meningitis dominates the clinical picture Not uncommonly the meningococcus behaves differently entering and persisting in the blood stream but failing to attack the meninges Septicæmia or bacteræmia is the result and the symptoms and signs produced are quite different from those of cerebrospinal fever since there is no evidence of meningitis

This rather unusual behaviour of the meningococcus takes two distinct forms (1) That of an acute fulminating type of septicæmia with massive

[illegible] infection generally leading to death in a few hours and (2) a [illegible] type where for weeks months or even years meningococci enter the [illegible] from time to time giving rise to a series of signs and symptoms which [illegible] well defined but which often pass unrecognized This second type [illegible] is much commoner than the first In the present series five cases were admitted to the Hospital Ship between January 1 1940 and July 1 1941 During the same period of time there were twenty six admissions of [illegible] fever with one death

There were no cases of acute fulminating meningococcal septicæmia but [illegible] of this disease (which is one variety of the Waterhouse [illegible] syndrome) is now given as it contrasts so strongly with the [illegible] type

The Waterhouse Friedrichsen syndrome is the term given to the associa[illegible] purpuric rash with adrenal hæmorrhage It was first recognized [illegible] Little in 1901 though Waterhouse in 1911 was the first to [illegible] the symptoms and pathology completely Friedrichsen in 1918 [illegible] pathological cases reviewed Little's twelve and sixteen by other [illegible] Several between seventy and eighty cases have been described [illegible] of massive blood-stream infection and although in the [illegible] pathogenic bacteria were incriminated it is now generally [illegible] meningococcus is responsible for at least 60 per cent of cases [illegible] of infancy 70 per cent occurring under the age of 2 [illegible] always supervenes within forty-eight hours There is [illegible] during an outbreak of cerebrospinal fever

The [illegible] in leaning the chills vomiting and purpura (often massive followed by cyanosis and collapse oliguria and hæmatemesis may also occur Signs of meningeal irritation are minimal and the cerebrospinal fluid is clear Blood culture is usually positive and meningococci can be grown from the spore Post mortem invariably shows massive medullary hæmorrhage in one or both suprarenals The cortex is only secondarily affected by pressure and might theoretically recover Congestion of the meninges is often present and there is no evidence of a suppurative menin gitis It seems that the infection is so acute that death occurs before any reaction can take place. Carey [1] has described one case of recovery in a woman aged 20 Here the cerebrospinal fluid although clear contained numerous polymorphs. The blood pressure was 63/35 She was treated with sulphonamide cortical suprarenal extract and anti meningococcal serum It appears that this is the most hopeful form of therapy if instituted early

Chronic meningococcal bacteræmia was first described by Solomon in 1907 and since then an increasing number of cases have been reported Stone and Copeman [2] from their recent experiences in France state that the disease is not uncommon and that many cases are overlooked They give details of seventeen out of twenty seven cases recently encountered They believe that the bedside diagnosis is simple and that it is important to make the diagnosis early

The onset is generally sudden and the clinical picture that of chills and joint pains with a rash occurring after a few days The commonest of these skin lesions are pink or red papules macules or nodules varying from a few millimetres to 2 centimetres or more in diameter Petechiæ are not uncom

mon. Sometimes tender subcutaneous nodules are present, especially in front of the shins The rash is most profuse on the limbs and back of the trunk and appears in successive crops The spleen may or may not be palpable The temperature is intermittent or irregular and relapsing, with afebrile periods during which the patient may feel quite well A remarkable feature of the disease is the absence of debility, wasting and anæmia, even after illness lasting many months The only complications in their series were one of epididymitis and one of mild peripheral neuritis

They mention elsewhere in their paper that they have seen two cases of cerebrospinal meningitis which gave a history strongly suggestive of meningococcal bacteræmia for from two to four weeks prior to the onset of the meningitis

The original diagnoses in their series were subacute rheumatism (8 cases) influenza (3 cases), erythema nodosum (2 cases) rubella (1 case) acute myalgia (1 case) arthritis (1 case) and rheumatism with toxic erythema (1 case) Where the duration of the disease prior to proper treatment could be ascertained it was found to be anything from two to nine weeks

With regard to incidence they quote Applebaum who in 1937 stated that there had recently been a noticeable increase in meningococcal bacteræmia in New York City and that this was not unusual preceding or following an outbreak of cerebrospinal fever Stott and Coperman agree with this

All their cases were promptly cured by sulphapyridine the doses not being stated A positive blood culture was only obtained on three occasions however there was no doubt on clinical grounds about the remainder

Burns and Clancy [3] state that meningococcal bacteræmia responds to sulphonamide just as well as cerebrospinal fever They describe two cases The first a child aged 12 had chills with high fever every other day for two months Quinine brought no relief There was some redness and swelling of the joints and the pyrexia was associated with crops of spots which disappeared after a day These consisted of erythematous areas 1 to 3 cm in diameter scattered all over the body They were tender to the touch The cerebrospinal fluid was normal The white count showed 14,000 leucocytes per cubic millimetre. The blood culture was positive twenty four hours after incubation. Fermentation tests and agglutination by anti-meningococcal serum in dilutions up to 1 200 proved that the organism was the meningococcus Four days after admission sulphanilamide was given by mouth For the first two days 4 grm were given daily on the third day 3 grm on the fourth and fifth days 2 grm and 1 grm on each of the last three days The infection promptly disappeared the temperature becoming normal after two days. His second case in a man aged 45 was similar There were rises of temperature to 103° F each mid-afternoon and with this there were crops of slightly tender spots Blood culture on ascitic dextrose broth was positive The signs and symptoms disappeared at once with sulphanilamide though the temperature rose again to 102° F on the eighth day This was considered to be "drug fever" as it came down to normal as soon as the sulphanilamide was stopped

Friedman and Buchanan [4] state that the disease often shows pyrexia with daily peaks and that these tend to occur at different times of day which

helps differentiation from malaria. They quote a typical case with spots, a palpable spleen and normal cerebrospinal fluid (leucocytes [illegible] 15 200 per cubic millimetre) with recovery four months after the first [illegible] symptoms. This case was in hospital about forty days and the temperature settled three weeks after a little serum had been given. More has not been given owing to a severe reaction. They comment that they do not think there is any danger from spinal puncture in these cases although some authorities say there is a risk of encouraging the meningococci to pass from the blood into the cerebrospinal fluid.

Kennedy [5] emphasizes the importance of the rash as a diagnostic feature. He describes it as resembling erythema multiforme distributed sometimes over the whole body with a predilection for the limbs. On the fore arms and shins it is more characteristic of erythema nodosum. He believes that what he said in 1926 still holds true. Given a case of erythema nodosum suspect meningococcal infection.

Heinle [6] in a report of five cases stresses the following points: (1) The disease often lasts several months and ends frequently with spontaneous recovery. (2) the temperature is sometimes tertian or quartan in type. (3) blood culture may not be positive until three weeks after incubation. (4) occasionally meningitis supervenes terminally. (5) arthropathy nearly always occurs and varies from mild fleeting pain upwards. Suppuration is rare. (6) intermittently endocarditis or pericarditis occur.

His first case was that of a woman aged 25 a known diabetic was characterized by purpura and a suppurative arthritis of the knee and metacarpo phalangeal joints. He suggests that the suppuration was due to the coincident diabetes. The illness lasted four months and she recovered spontaneously. Meningococci were grown from the abscesses but not from the blood. Antimeningococcal serum in large doses had no effect. His second case was in a woman aged 36. Every third year over a period of twelve years she had had an attack of rigor followed by fever and generalized pain especially in the legs. The attacks often lasted three months and during three of them she had suffered joint pains. She was sixty days in hospital and for the first few weeks had a daily temperature of 103° F. and her body was covered with crops of small fleeting papules. Both liver and spleen were palpable. Blood cultures on Hoyne broth were positive on three occasions. The cerebrospinal fluid was normal. She made a spontaneous recovery and it is doubtful whether the serum which she was given between the thirty fourth and thirty ninth days was of any use. Two years later she was readmitted and died. Post mortem showed broncho pneumonia cirrhosis of the liver and haemorrhage into the cerebellum. These findings appeared to be quite unrelated to the first illness. The third case a man aged 42 had fever and purpuric spots covering almost the entire body. Blood culture was repeatedly positive. The illness lasted six months and he recovered. A transfusion may have aided this. He had a second somewhat similar attack two years later though without spots and only lasting ten days. The fourth and fifth cases had signs and symptoms of subacute bacterial endocarditis and the meningococcus was found to be the causative organism.

He comments that his cases show a variety of manifestations and that meningitic involvement should be considered as only one of these albeit the most obvious one.

M[illegible] case of a boy aged 5 in [illegible] listed [illegible] periods of pyrexia alternating with [illegible] periods of [illegible] nearly normal temperature and [illegible] much of the time [illegible] well. With the temperature [illegible] pu[illegible] [illegible] rashes fluid in the left [illegible] and [illegible] Nav showed evidence [illegible] [illegible] [illegible]

[illegible] bacteræmia query meningococcal [illegible] treatment [illegible] all investigations were [illegible] perform[illegible] between 99 and 100 [illegible] at night [illegible] 70 and 108

[illegible] Blood count Red cells 4 840 000 per c mm hæmoglobin [illegible] leucocytes 22 700 per c mm polymorphs 81 per cent [illegible] per cent monocytes 3 per cent

[illegible] ml fluid Pressure normal Clear colourless fluid—no [illegible] per mm (lymphocytes) Total protein 25 mgm per 100 c c [illegible] with

[illegible] Agglutination No agglutination of serum with *B typhosus B paratyphosus A* or *B paratyphosus B*

Blood culture February 24, 1941 Blood incubated with glucose tryptose broth (Difco)

February 27 Slide from culture showed Gram negative diplococci Sub cultures made

March 1 Subcultures gave growth of similar organisms on Loeffler's blood serum

March 3 Sugar reactions showed that the organisms were *D meningitis*

March 4 Agglutination of organisms with polyvalent anti meningococcal serum seen in dilutions up to 1 160

Treatment with sulphapyridine (M & B 693) was begun on February 27, 1941 Two grm were given as an initial dose and thereafter 1 grm four hourly throughout the twenty four hours, the patient being wakened for the nightly doses The temperature and pulse fell to normal twenty four hours after the first dose and remained so thereafter (*see* Chart I) On the

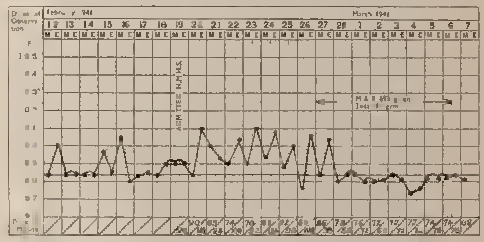


CHART I

fourth day after the onset of treatment the drug was reduced to ½ grm four hourly for three days and finally ½ grm three times a day for two days making a total dosage of 31 grm in eight days

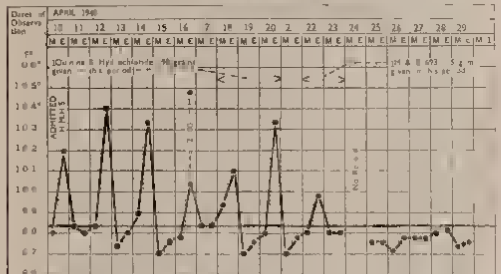
No further spots appeared after the exhibition of the drug and the convalescence was normal up to the end of the time that he was kept under observation Further inquiry showed that he returned to duty after a period of sick leave

[illegible] —Wr[illegible] 25 Admitted with a [illegible] of the [illegible] never [illegible] 20 1941 [illegible] 1 6 1941 [illegible] shore hospital on [illegible]

[illegible] —He [illegible] until three [illegible] before admission [illegible] been no [illegible] diseases His illness began with [illegible] but no [illegible] subsequently developed [illegible] headache [illegible] but [illegible]

[illegible]

[illegible] —He looked [illegible] temperature 99 6 pulse 111 On [illegible] extensive [illegible] spots of the thighs and [illegible] the size of a shilling [illegible] thirty in all [illegible] He stated that he had felt [illegible] the pains in the limbs [illegible] moving the right [illegible] shoulder also pain in the [illegible] swelling [illegible] showed no abnormality [illegible] and abdomen were normal [illegible]


Dates of Observation
APRIL 1940
18 19 20 21 22 23 24 25 26 27 28 29
M E M E M E

[illegible] 250 mm [illegible]
[illegible] (as) protein 25 mgm per 100 c
[illegible] sterile
[illegible] 10,000 per c mm

[illegible] April 21 1911 and sulphaguanidine [illegible] were [illegible] post and afterwards 1 gm four hourly [illegible] the tu[illegible] being weakened for the eighth [illegible] four and [illegible] was reduced to ½ gm [illegible] days [illegible] ½ gm three times a day for [illegible] pyridin [illegible] progress of the case was satisfactory [illegible] appeared [illegible] from the ankle and shoulder [illegible] severe [illegible] knee and an effusion [illegible] fluid [illegible] presence of this that accounted for the [illegible] of temperature [illegible] persisted until his discharge (*see* Chart 2) Further [illegible] showed [illegible] presence in the shore hospital [illegible] and [illegible] duty after a period of sick leave

Case 3—A [illegible] aged 21 Admitted on April 10 1910 [illegible] of acute [illegible] Discharged to a shore hospital on April [illegible] 1910

History [illegible] had three weeks before admission [illegible] then began [illegible] pain in the lower part of the back [illegible] thighs with [illegible] rigors each afternoon No [illegible] poor appetite and he had not had a roll or sore throat He [illegible] suffered a similar attack much less severe attack in 1907 [illegible] in three days No other relevant previous history and he [illegible] He remained at work for ten days and then reported sick [illegible] Camp Hospital that he had had a rigor with temperature 102 to 104° every fourth evening The heart and lungs were normal

Examination—On admission his general condition was [illegible] Temperature 98° pulse 116 No abnormal physical signs [illegible] in any system except slight tenderness of the calves Joints not involved and in particular no evidence of meningeal irritation During the day the temperature gradually rose and at 1800 was 102 He was then shivering and his pulse [illegible] accelerated The following day April 11 he was [illegible] and the temperature Subsequently with the utmost regularity [illegible] on alternate days the chart resembling that of tertian malaria On each two occasions were there actual rigors and usually the fever increased gradually throughout the day reaching its maximum between 1800 and 2100 (Chart 3) On April 14 four days after admission the spleen was palpable and continued to be so for three days On April 15 a patch of herpes appeared on the upper lip On April 18 and for the next [illegible] days only a few pink non tender macules appeared on the abdomen and right forearm A further crop occurred on April 20 and again lasted for one day

Investigations—(1) Blood count April 14 1910 Red cells 5 200 000 per c mm Hæmoglobin 95 per cent leucocytes 18 000 per c mm polymorphs 74 per cent lymphocytes 20 5 per cent monocytes 3 per cent eosinophils 2 per cent basophils 0 5 per cent

(2) Repeated examinations showed no malarial parasites

(3) Blood culture No growth occurred after seven days incubation

(4) Agglutination tests Negative results were obtained against the typhoid paratyphoid *B melitensis* and *B abortus* organisms

(5) Culture of urine Cultures remained sterile

(6) Culture of stools A pure growth of lactose fermenting organisms was obtained

(7) X ray of chest No abnormality detected

(8) Lancet [illegible] 22 1910 13 400 p [illegible]

(9) A lumbar [illegible] not performed

Progress and [illegible] The tertian fever showed a [illegible] 30 gr of quinine by [illegible] and on April 22 [illegible] still hoarse Had [illegible] 10 grm on that day and the [illegible] was 99 8° On Ap[illegible] grm and there was [illegible] this was of no [illegible] the afebrile day He had [illegible] fever

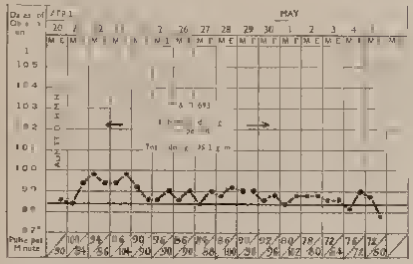


CHART 3

to a Hospital Convalescent and there is no record of his progress in April 24 He remained at a short hospital from April 2 to April 20 during which time he was quite well and had normal temperature and pulse He stated that he felt far better than at any previous stage of his illness He received no sulphur preparations other than that which he was given in the Hospital Ship a total of 15 grm On April 30 he was transferred to a military establishment quite satisfactorily and a further follow up has not been possible

Case 4—A gunner aged 46 Admitted [illegible] April 19 1910 [illegible] to a shore hospital on May 2 1910

This case is incomplete as he was in a convalescent for only two days No further information has been obtained from the shore hospital where he was transferred as he was almost immediately sent home from there to an army establishment

History—For the six weeks prior to admission he had had some rheumatic attacks with pains in the bones These tended to occur every fourth night With the attacks he had noticed crops of spots the dates which [illegible] for some hours prior to the eruption of the spots which were situated on the shoulders back and limbs No history of previous relevant illness and he had never been abroad

Examination—Temperature normal pulse 64 General condition excellent On the trunk and limbs were many oval red rather hard spots between half to one inch in length they bore a marked resemblance to erythema nodosum except that they were not tender All other systems were normal and there were no joint swellings

On the [illegible] day the temperature rose to 101·6°, and further spi[illegible] appeared. No [illegible] was given before he was transferred.

Case 5.—A supply assistant, aged 21. Admitted with a diagnosis of rheumatism on A[illegible] 5, 1940. Discharged to a shore hospital on September 1, 1940.

History.—O[illegible] before admission he had a sore throat which lasted one day. This [illegible] followed by stiffness in the fingers, ankles and shins. The [illegible] much worse first thing in the morning and pro[illegible] the day. The pain showed no tendency to flit about. On one o[illegible] red patch on his right shin which lasted for [illegible] hours. There is considerable constitutional disturbance—he felt ill, sweating profusely, but did not have headache or vomiting. There was nothing [illegible] history and he had not been abroad. Prior to admission he had [illegible] sodium salicylate without relief.

Examination.—Temperature 99°, pulse 78. He was ill looking and toxic. [illegible] revealed little abnormal. There was some pain on [illegible] the ankle, fingers, wrist and elbow joints, but the range was full and there was no [illegible] or swelling, nor were rheumatic nodules present. The [illegible] normal, and there was no rash. Throat healthy.

Investigations.—(1) Blood cultures remained sterile.

(2) Leucocytes [illegible] 8,700 per c.mm.

(3) A[illegible] with the typhoid group of organisms and with *B. melitensis* and *B.* [illegible] were negative.

Treatment.—In view of the possibility of subacute rheumatism, large doses of salicylates, starting with 240 grs. a day, were given two hourly for three and a half days. This made not the slightest difference to his temperature (*see* Chart 4) or symptoms, and its only effect was to give him a rash which disappeared in two days. As he was not improving, it was decided to try the

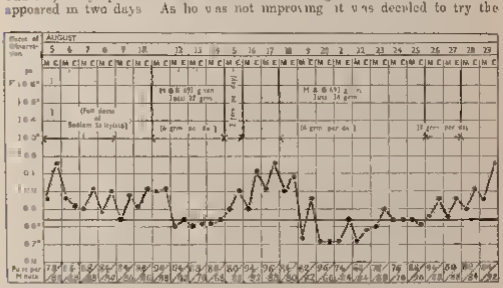


CHART 4

effect of sulphapyridine. Twenty seven grs. were given over a period of five days. On the fifth day the dose was reduced from one gm. to half a gm. four hourly. The initial effect of the drug was most striking. His pain and stiffness rapidly went and the temperature came down to normal. As soon

as the dose was [illegible] his symptoms returned and the temperature rose (see Chart 1) [illegible] was therefore started three days later. One gm. was given [illegible] next eight days. The same thing happened as previously th[illegible] improvement until the dose was reduced on the ninth day to ½ [illegible] then he relapsed (see Chart 4). As he had taken in all 81 gm. [illegible] treatment was stopped and he was discharged to a shore [illegible] with the same condition as when he entered the ship. His [illegible] history is of interest. He remained in the shore hospital for one month [illegible] from an iron nitrate was given no further treatment. He [illegible] and made a complete recovery returning to duty after a period of sick leave.

Comments

(1) Symptomatology. It will be seen that the clinical symptoms and physical signs of the present series agree well with the descriptions in the literature, especially those of Stott and Copeman, who were also reviewing cases in the present war. In the present series it will be noted that in all cases pain was complained of at some period of the illness. Twice it was articular in site, and in one of these actual joint effusion occurred (Case 2). In the remainder pain was felt in the muscles or bones. Four of the five cases had tenderness of the calf muscles. Fever was invariably present, however, in only one instance was it characteristic (Case 3) when it was tertian in type. This feature is described in the literature reviewed, and Professor J. A. Ryle, M.B., in a personal communication, has mentioned a similar finding. In four out of the five cases spots were present, these were tender in two and in a third (Case 4) tender areas preceded the eruption. The spleen was palpable in one case only and the blood culture positive in two. No signs of meningeal involvement were met with, but in Case 2 the cerebrospinal fluid was under increased pressure although normal cytologically.

(2) Diagnosis. Where the blood culture was positive (Cases 1 and 2) no comment is required. In Case 3 (with tertian fever) the clinical picture and response to treatment are so characteristic that no doubt can be entertained reviewing it retrospectively. At the time of admission some difficulty was experienced as it was the first case encountered and the symptomatology was not fully appreciated. Case 4 was under observation for such a short time that dogmatic statements are not permissible, however, he was admitted within three weeks of Case 3 and from the same station and all the available evidence points to the diagnosis being correct. Subacute rheumatism must be considered seriously in the differential diagnosis of the last case. The length of illness, the absence of joint swellings and heart signs, the failure to respond to salicylates while reacting albeit temporarily only to sulphapyridine, are against rheumatism. It is possible to conceive of very real difficulty if subacute rheumatism were complicated by a skin lesion such as erythema nodosum. In a typical case of meningococcal bacteræmia there should be little difficulty in differentiating it from rheumatism if the disease be borne in mind, though it appears that it is still insufficiently recognized, and in the present series three out of the five cases were admitted as rheumatism.

(3) Prognosis and Treatment. Sulphapyridine produced dramatic results in two cases (1 and 3); one case (2) was markedly improved, but the joint

effusion [illegible] responsible for slight elevation of temperature for some time In Case 5 the [illegible] discontinued when the dose of the drug was reduced and the patient [illegible] recovered

The discrete [illegible] unusual prognosis Sulphapyridine can cut short an illness which may persist for many weeks or months if it remains undiagnosed

Summary and Conclusions

Five cases [illegible] meningococcal bacteræmia have been described occurring in a Hospital Ship during a period of eighteen months The disease is common during [illegible] of cerebrospinal meningitis twenty-six cases of the latter having been admitted during the same period of time.

The literature has been reviewed

My thanks are due to Surgeon Captain J H B Martin M D R N for permission to publish these cases and for help in arrangement of the paper and to Surgeon Lieutenant Commander C A Grant R N V R. for assistance with the temperature charts

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ANGINA PECTORIS

By Surgeon Commander H Lovell Hoffman M B M R C P R N V R

Severe pain in the chest is always an alarming symptom and one which will almost certainly force a patient to seek medical advice Angina pectoris is one of the common examples of such pain may be due to a variety of causes Sometimes when the pain is of short duration and occurs after some undue exertion it is merely a warning of the presence of coronary arteriosclerosis in a patient who by limiting his activities may look forward to many years of useful work When more prolonged however it may signify the destruction of a large portion of cardiac muscle by infarction the patient's life being in immediate and grave danger

In the Royal Navy at the present time retired officers and over age pensioners are carrying out their strenuous duties under the worst possible circumstances the very conditions in fact in which anginal symptoms are to be expected with increasing frequency At any moment an officer of high standing may develop such symptoms and the treatment there and then afforded may have much more far reaching consequences than the mere fate of the patient

Should an electrocardiograph not be available I have [illegible] great difficulty in distinguishing between those cases of angina pectoris due to coronary infarction and those due to cardiac causes. For the benefit of those who may have similar difficulties I propose to discuss the [illegible] of angina pectoris with special reference to certain of my own [illegible] and the recent work of some American authors who have done much [illegible] pain and the differentiation of the several varieties of this symptom on a sound basis. In an article of this length it is impossible to consider the subject fully, and I will therefore confine my remarks to those points which appear to be of particular importance.

The Character of the Pain

Anginal pain can be described as a sensation usually starting beneath the sternum or in the left side of the chest which may radiate in the following directions: (1) Across or around the thorax; (2) into one or both arms, more especially the left; (3) to the neck, face or teeth, usually on the left side; (4) through the chest to the back; (5) into the abdomen. This sensation may vary from a feeling of weight or oppression to an agonizing pain often accompanied by a feeling of mental uneasiness, amounting at times to an anticipation of impending death, the so-called angor animi.

The Cause of the Pain

There are three main theories of the causation of this pain, namely:

(1) Distension of a diseased aorta (Allbutt).

(2) Myocardial degeneration in association with a sensitive nervous system (Mackenzie).

(3) Relative myocardial ischæmia.

The third theory is the one most generally accepted at the present time for the following reasons: (1) The pain of cardiac infarction, because of its general character, intensity, and the areas in which it radiates, is considered to be a variety of angina pectoris. No one will deny that in cardiac infarction we have the most extreme type of myocardial ischæmia, in which exists a portion of heart muscle becoming entirely degenerate due to lack of blood supply. (2) The most common post mortem finding in patients with angina pectoris is narrowing of the coronary arteries from atheroma, with consequent diminution of blood supply to the heart muscle. (3) Anæmic patients in whom the oxygen carrying power of the blood is reduced often suffer from attacks of angina. (4) The coronary arteries are known to obtain most of their blood during diastole, the maintenance of diastolic blood pressure being essential for this supply of blood. In aortic regurgitation, where the diastolic blood-pressure is low, angina is likely to occur. (5) Lewis has demonstrated muscular pains during exercise in a limb, the blood supply of which had been occluded, and believes that anginal pain and that of intermittent claudication are similarly produced.

The peculiar nature of anginal pain makes one wonder if cardiac ischæmia is the only factor responsible. Why should exertion above a certain point produce pain so severe as that which occurs in cardiac infarction where a piece of cardiac muscle has been virtually destroyed? Some threshold has obviously been reached, either in the cardiac muscle which is experiencing

ischemia [illegible] as system which is expressing the pain Lewis is the result [illegible] experiment already quoted, consists thus during muscular activity a [illegible] acting factor pours into the tissue [illegible] and is normally removed by [illegible] blood With the circulation excluded this substance [illegible] the threshold is reached and pain is produced This [illegible] explanation It may be [illegible] than the threshold [illegible] Mackenzie's theory is in part at least correct Angina has [illegible] in common with other [illegible] inexplicable disorders [illegible] such as epileptiform convulsions and [illegible] Hitherto [illegible] belonged to the class of spasmodic complaints [illegible] reasons assigned by others for his opinion The [illegible] which is attacks [illegible] after the first sleep which is a time [illegible] in many spasmodic disorders

In the earlier [illegible] of the pathology underlying angina pectoris we find that the physicians of the eighteenth century realized the connection between this symptom and the condition of coronary arteriosclerosis Parry [2] was convinced of the relationship and quoted many examples from the cases of his contemporaries One of these a description by Jenner of the dissection of a Mr Carter of Dursley is of peculiar interest "I was making a transverse section of the heart pretty near its base when my knife struck against something so hard and gritty as to notch it I well remember looking up to the ceiling which was old and crumbling conceiving that some plaster had fallen down But on further scrutiny the real cause appeared the coronaries were become bony canals Then I began a little to suspect Since that time various theories have been advanced to explain the pathology of angina pectoris but the pendulum has swung back and we now agree with the findings and deductions of these painstaking and accurate observers of nearly 150 years ago

Clinical Types of Angina

It is extraordinarily difficult to correlate some of the cases of angina which are encountered in practice with the clinical types described in most medical textbooks There are three terms which I find especially misleading, namely angina of effort angina of rest and spasmodic angina These terms appear to serve no useful purpose and are in my opinion, better forgotten My reasons for this statement are as follows the fact that anginal pain may come on during exertion is by itself of no diagnostic significance unless the accompanying clinical findings are taken into account For example the case of cardiac infarction which I have most cause to remember occurred in a man who after lunch on a November day with a cold east wind started to weed his garden Almost at once he was seized with severe anginal pain which although it was unrelieved by rest and only responded to morphia was not accompanied by any signs of shock or alteration in the rate or character of the pulse The subsequent pyrexia and the eventual fatal outcome proved that a condition which had at first looked like angina of effort was in reality a case of cardiac infarction

There is a general impression that angina, other than that of cardiac infarction usually occurs as a result of effort shock or emotion, and that these causes will be found if carefully sought for Angina of rest not due

to infarction, is considered to occur most commonly as an end-result in cases of "angina of effort" whose tolerance has deteriorated to such an extent that the slightest movement provokes pain. Again, certain cases with pain at rest while tolerance to exertion is still good are spoken of as "spasmodic angina." One must presumably, visualize a coronary artery already partially occluded by atheroma which becomes still further narrowed by spasm. As Best and Taylor [3] state, it seems unlikely that such a process can possibly occur in an arteriosclerotic and hardened vessel. In my experience, angina occurring at rest in a patient whose tolerance to exercise is still comparatively good is far more common than the textbooks would have us believe. In these cases, although no undue exertion, shock or emotion can be found, a sudden increase in the oxygen requirements of the heart muscle may occur which the narrowed coronaries are unable to supply immediately. Such a state of affairs is frequently brought about when these patients awake from sleep. Other examples of "angina of rest" will be encountered, however, in which no such cause can be discovered, and this term, like "angina of effort," signifies no definite pathological process.

A further cause for confusion is the fact that the terms "coronary thrombosis," "coronary embolus," "coronary occlusion" and "cardiac infarction" are often loosely used to describe a single clinical entity. It will be shown later that a fresh coronary occlusion may take place within an infarction, and that the reverse may also occur. Coronary embolus is a comparatively rare condition which may supervene in patients who have left-sided valvular disease or infective endocarditis, or in whom mural thrombi on the left side of the heart have become detached. Such patients need not have arteriosclerosis or diseased coronary arteries.

Much work has recently been published which has helped to clear up the chaos which exists in the classification of angina. An article by Blumgart, Schlesinger and Zoll [4] gives such a clear conception of the processes that are responsible for the various types of anginal pain, that I propose to quote their findings and conclusions at some length.

Their material consisted of 355 cases studied from the clinical and pathological aspects. They adopted a special technique for injecting the coronary arteries after death, radiograms were taken, and the myocardium was examined histologically. Thus they were able to examine the degree of anastomosis which is present between the coronaries in normal hearts and to compare it with that which develops as a result of coronary atheroma.

Their most important findings were these:

(1) In normal hearts the intercoronary anastomoses are too small to prevent myocardial changes should coronary occlusion occur.

(2) Complete occlusion or considerable narrowing of the coronary arteries may occur without clinical signs or symptoms, and without myocardial damage. The coronary reserve is however reduced.

(3) In these cases an adequate collateral circulation had formed, by passing the occluded artery and maintaining a blood supply to the myocardium which would otherwise have become degenerate.

(4) In all cases of angina pectoris without evidence of hypertension or valvular disease, old coronary occlusion or narrowing of the vessels was found.

(5) Fresh cardiac infarction could exist in the absence of fresh coronary occlusion. Most of these cases however showed evidence of old complete occlusion.

Further they consider that the changes which occur in the myocardium depend solely on the duration of the relative ischæmia, and not on the manner by which the ischæmia is produced.

As a result they claim three syndromes: (*a*) Angina pectoris—sudden brief pain on exertion due to brief myocardial ischæmia. (*b*) Coronary thrombosis—more prolonged pain due to more prolonged ischæmia but unaccompanied by evidence of myocardial infarction such as fever and leucocytosis. The pain may differ in character from that previously experienced and may follow an increased call on the heart for example during exertion or when the blood pressure is low as in shock. (c) Cardiac infarction—A condition which will occur if myocardial ischæmia is sufficiently prolonged. This is an irreversible process and is followed by fever leucocytosis increased blood sedimentation rate and progressive electrocardiograph findings.

The authors consider that in patients previously well who suddenly suffer from attacks of mild or severe angina on but little exertion or in those whose pre-existing angina is suddenly more easily precipitated the occurrence of complete occlusion or progressive narrowing of a coronary artery must be considered.

It is fair to assume that the longer the condition of coronary atheroma has existed the more extensive will be the intercoronary anastomoses, and that the immediate prognosis in a comparatively young patient who develops angina is worse than in an older one with a more perfect collateral circulation (Wolferth [5]).

By bearing these facts in mind we now find that most of the difficulties previously encountered are removed. For example the cases in which anginal pain is prolonged and unrelieved by rest yet which do not develop cardiac infarction are cases of coronary failure possibly due to fresh coronary occlusion. My own case of cardiac infarction which started on exertion was in all probability induced by prolonged cardiac ischæmia it was not necessary to postulate a fresh coronary occlusion. I shall refer again to this work when discussing treatment.

Differential Diagnosis

I have already described the main features of anginal pain and it is unnecessary to recapitulate them. Nor do I intend to give a complete list of the conditions with which angina pectoris may be confused. Such a list would include almost all the causes of sudden acute pain in the thorax or abdomen these are well known to us all.

It will be sufficient to stress a few points which may be helpful in differential diagnosis. One of the most remarkable characters of the so-called angina of effort is the dramatic onset of the attack. A patient on walking uphill may feel no discomfort or merely some slight oppression or uneasiness in the chest. Presently to his surprise he is afflicted with a sensation which literally brings him up 'all standing'. He realizes that something extraordinary has occurred that the pain while being related to exertion is horribly worse than he would expect from previous experience of similar

exertion. He feels the same definite threshold has been [illegible] for as if a trigger has released some pain-producing mechanism which could not possibly exist under natural circumstances. I mention this fact because I want to emphasize the difference between true angina pectoris and the ordinary discomfort, tightness or even pain in the chest of gradual onset which a normal person may feel after strenuous exercise, and which the patient with coronary sclerosis may experience after comparatively little exertion. This discomfort is undoubtedly due to cardiac ischæmia and may precede the anginal attack, but the patient will be quite definite that it is an entirely different sensation from the attack itself. One important point is that the former pain or discomfort is accompanied by a proportional amount of dyspnœa, whereas when anginal pain occurs, dyspnœa may be entirely absent. The patient may have no difficulty in getting his breath, and may even volunteer the statement that he wants to take deeper breaths than usual. This fact has been frequently commented on by writers on this subject. Parry [2] writes: "This sensation [illegible] is altogether so free and distinct from any difficulty in breathing that patients during their paroxysm make a deep inspiration with the utmost ease, and in some instances appear to be fond of sighing deeply and of retaining their breath."

The pain often experienced by patients with anxiety states is not easily confused with angina. It is usually felt over the apex of the heart beneath the point where the patient considers that his heart is situated. It is sometimes described as an ache which, although worse on exertion, persists when the patient is at rest and may be constant, it may, however, be a momentary stab, "like a knife," lasting only a second or two. These pains are far more localized than true angina, which is usually diffuse, and may radiate in the directions already mentioned. They are sometimes called "cardiac angina."

The discomfort or pain of dyspepsia is frequently confused with angina, and the differential diagnosis between gastric and cardiac pain may be extremely difficult. A cardiac origin should, thus, be suspected if pain after meals is increased by exertion. A patient of mine who had a coronary infarction complained, in the days following his attack, of violent indigestion, the sensation being referred in the right side of the back and chest—no ordinary remedies would relieve this, and its true nature was apparent when the sensation became agonizing and a fresh coronary infarction occurred. On another occasion I was asked to see a patient with chronic nephritis whose dyspepsia was unrelieved by alkalies. I found that he had a definite pericardial rub, his pericarditis eventually proving fatal. These two cases have always impressed on me how easily cardiac and pericardiac pain may be confused with dyspepsia or flatulence which does not respond to the usual treatment.

From the point of view of treatment, the importance of the diagnosis of cardiac infarction is obvious. We have seen, from the work by Blumgart and his colleagues, that the duration and character of the pain in coronary failure and cardiac infarction are very similar. Cardiac infarction is however more likely to be accompanied by signs of shock, such as alteration in the character and rate of the pulse, and a fall in blood pressure. Fever nearly always develops, although it may only be in the region of 99° to 100° F. Auricular fibrillation, extra systoles, or gallop rhythm sometimes occur, and

acute cardiac failure may follow. A pericardial rub only develops in 25 per cent. of cases (Wolferth) [5]. In considering necessary investigations in a suspected case of cardiac infarction I do not intend to discuss the electrocardiograph findings as these are available only under ideal circumstances. It may be possible, however, in cases of doubt, to count any thing above 10,000 cells per c.mm. being considered pathological. The estimation of the blood sedimentation rate is a simpler examination to carry out and it should not be difficult to set up the Westergren apparatus even in a small ship. The disadvantage of this technique is that no correction is made for anæmia, but a rough check can be made by a hæmoglobin estimation. Anæmia increases the rate of sedimentation of the red cells and polycythæmia decreases it. If, however, a rapid rate is found after an attack suspected of being coronary infarction, and this rate gradually returns to normal, it is good evidence that infarction has occurred (Risman and Brown [6]). With this as the only accessory investigation, and a knowledge of the protective powers of intercoronary anastomosis, it should not be difficult to make a fairly accurate diagnosis in most cases of anginal pain.

Treatment

I propose to discuss treatment under the syndromes described in Blumgarts article.

(1) Angina and coronary failure. When these conditions occur in a patient for the first time, if anginal pain suddenly becomes more frequent or severe, or if it alters materially in character, the patient should be put to bed for a week. As already mentioned, a small coronary occlusion may have occurred, with a possibility that cardiac infarction may supervene later. At the end of this time he may be allowed gradually to increase his activities, a careful watch being kept on his pulse-rate. If pain recurs, he should be put back to bed for a further period. For the relief of pain nitrites are invaluable. They may be given either by inhalation of the contents of capsules of amyl nitrite, or by mouth in the form of tab. trinitrini gr. ¼ss. The action of tab. trinitrini varies according to how it is taken. For a rapid and transitory effect the tablet should be chewed up. For a slower and more prolonged effect it should be dissolved under the tongue. Attacks which occur at special times of the day or under certain definite circumstances may often be prevented by giving a tablet before the symptoms are expected to occur, and their regular administration may reduce the frequency of the attacks. Their effect is so transitory that they have no permanent effect in lowering blood-pressure. Certain other drugs, for example, erythrol tetranitrate, have a more prolonged effect, but I have not had much success from their use. One tablet of theominal given each morning and evening is useful for regular administration, of its constituents, the luminal acts as a sedative and the theobromine is supposed to dilate the coronary arteries.

(2) Cardiac infarction. In this condition absolute rest in bed is essential and the patient should do nothing whatever for himself. If it can be tolerated, recumbency is ideal, but if cardiac failure and dyspnœa supervene the patient may have to be propped up with pillows. It is during the first fortnight that the danger of rupture of the infarct is greatest, and as it is supposed that the cardiac muscle will not heal in under four to six weeks, absolute rest should

continue for this period. After this activity may be gradually increased provided that no undue quickening in the pulse-rate occurs. The only remedy for the pain is morphia. Half a gram may have to be given at the onset, and repeated in half an hour if there is no relief. Nitrites are ineffective and are supposed by some to be dangerous. For auricular fibrillation digitalis may be given cautiously, but full doses are unsafe in cardiac infarction.

In all cases of angina the possibility of associated conditions must be borne in mind. If evidence of syphilis is found, treatment is best started with mercury and iodides. Arsenic by causing a temporary reaction in the lesion may quite easily close up the mouth of a coronary artery. This Jarisch-Herxheimer reaction is thought by some to be very rare, but I have seen a man with syphilitic aortitis who developed anginal attacks after his first dose of N.A.B. A diseased gall bladder or appendix may precipitate attacks which are relieved when the offending organ has been removed. One of my patients completely lost his attacks after an operation for piles. Another, who was greatly improved for two years following appendicectomy, then had a recurrence of her attacks. While under treatment she fell out of bed and broke her wrist, which was set under local anæsthesia. Her attacks again entirely ceased for several days, and her blood pressure fell from 225/145 to 140/85. When it returned to its former level the attacks slowly recurred. It is not always easy to see why certain cases are improved by apparently unrelated surgical procedures. Perhaps the enforced rest gives the myocardium time to recover, and an adequate collateral circulation is formed.

Sometimes the factors precipitating attacks of angina are not easy to discover. The following case illustrates a rather unusual contributory factor. A man aged 60 had for many years worn a Curtis abdominal belt because he had been told by a radiologist that he had visceroptosis due to riding a motor cycle on bad roads in France during the last war. He eventually left off the belt, and his symptoms were discovered to be due to diverticulosis of colon and duodenum. Four months later he had an attack of oppression in the chest, preceded by pain in the left jaw which he ascribed to toothache. These symptoms first occurred after he had been sitting in the back of a small car with his knees drawn up out to his abdomen. Other attacks followed on his getting out of a chair after sitting for some time. Nothing abnormal was found clinically in his heart, and an electrocardiogram was normal. He was however put to bed, as we believed that a small coronary thrombosis without infarction had occurred. He asked me if the fact of having off his Curtis belt could have had any connection with his new symptoms, but at that time I considered that it was unlikely. Later the consultant to whom I sent him showed me an article by Kerr [7] who described the successful treatment of angina in obese subjects by a special abdominal belt. He assumed that a lax abdominal wall allowed blood to accumulate in the mesenteric vessels, causing relative cardiac ischæmia. Although our patient was an extremely thin man, we suggested that he should wear a light elastic belt in future. For four months he continued to have slight attacks of pain, they then ceased, and he has been entirely free for two years. It is probable that the attacks started after a small coronary occlusion, but that they were precipitated by sudden relative cardiac

ischaemia [illegible] assuming the [illegible] the consent [illegible] adequate [illegible]

Prognosis

The [illegible] presents [illegible] 48 his [illegible] the [illegible] With the [illegible] his [illegible] ability of the [illegible] he con[illegible] able signs being [illegible] less and [illegible] the necessary [illegible] of congestive heart failure

References

(1) [illegible]

(2) [illegible]

(3) [illegible]

(4) [illegible] *Brit* **109**, 1969 [illegible]

(5) [illegible] and Brewer M G [illegible] *Med Science* **194**, 382 October [illegible]

(6) [illegible] *Philadelphia* Fourth series **7**, 162 [illegible]

(7) [illegible] see Article Thrombosis referred to in the text)

THE TREATMENT OF SOME COMMON DERMATOSES

By Squadron Leader Commander H R VICKERS R N V R

Dermatology has been regarded as the outcast of medicine and it seems [illegible] for many practitioners to state often even boastfully [illegible] anything about skins Since the skin is probably the [illegible] producing disease either in the Services or in [illegible] ignorance of skin diseases should rather be a source [illegible] when the microscopic pathology and the result of treatment [illegible] be seen

Many patients admitted into a ward for diseases of the skin arrive as [illegible] of treatment misapplied in the early stages of a dermatosis and [illegible] in my requests I have had from Service practitioners for [illegible] guidance in various skin conditions has led me to outline methods of treatment found satisfactory by experience in the common dermatoses of serving personnel These are scabies impetigo dermatophytosis and dermatitis In addition although not common warts and

a [illegible] to cause trouble to Medical Officers [illegible] establishment

Since this article is primarily intended to be of use to Medical Officers out of reach of specialized forms of therapy these are purposely mentioned

Scabies

Although the treatment of scabies has been discussed previously in the Journal (Rairliffe [1] Holmes [2]) the importance of dealing promptly and efficiently with the acarus warrants repetition Many methods of treating scabies have been advocated their multiplicity indicating that none are ideal For any routine treatment to be practicable it must conform as closely as possible to the following principles (1) Ease of administration (2) rapidity of cure (3) negligible rate of recurrence (4) non irritant (5) low cost With any scabies routine the disinfestation of the patient's clothing and bedding and if the man sleeps ashore treatment of his wife and family at the same time as himself must not be overlooked These two factors are the commonest causes of recurrent cases admitted to hospital

In the Royal Navy by far the best treatment is a modification of that elaborated by Kissmeyer (1937) The routine is as follows The parasiticide is a lotion consisting of equal parts of soft soap isopropyl alcohol and benzyl benzoate The patient is immersed in a bath of water at 100° F anointed with soft soap the body soaked for ten minutes and then all the burrows are thoroughly scrubbed open with a hard bristled nail brush While still wet the lotion is brushed on to the whole body from the neck to the soles of the feet This painting is continued for five minutes and the body is allowed to dry The lotion is brushed in for a further five minutes dried gently with a towel and clean clothes put on In twenty four hours the patient has a hot bath dries and dresses in his own clothes which have been disinfested in the interval He is then fit for duty the treatment taking only twenty four hours The recurrence rate is very low the majority of such cases can be traced to the causes mentioned above. Dermatitis does occur occasionally however it rapidly responds to application of zinc cream This routine has withstood the test of time and the tremendous advantage of the cure taking only twenty four hours gives this method pride of place Each patient requires about 6 oz of lotion costing about 9d A slight modification of this has been published by R F King [3] who has obtained the same good results by substituting industrial spirit for isopropyl alcohol The advantages are decrease of cost and more plentiful supply

In the Navy where each man has his own bedding and a limited amount of clothing arrangements for disinfestation by either dry or moist heat can easily be devised (leather goods should not be subjected to high temperatures) In small ships disinfestation is more difficult contaminated articles should be soaked in some weak antiseptic solution for twenty four hours cotton goods can be boiled and heavy clothing may be treated with a hot iron as for pediculosis The life of the acarus away from its host is short and clothing wrapped in paper and left for seven days becomes disinfested

Treatment with derris root powder (Saunders [7]) is at present on trial

Impetigo Contagiosa.

This disease, second to scabies in frequency, is ever present when large [illegible] of people are living in close contact. In many cases previously healthy [illegible] attacked, however, it is important to remember that invasion by the [illegible] pyogenes often gives rise to impetigo on some pre-existing dermatosis [illegible] especially scabies, seborrhoeic dermatitis and chronic fissures in the skin [illegible]. When the scalp is attacked, search must always be made for the pediculus capitis.

The face is the commonest site of primary impetigo; the superficial, slightly irritable, grouped vesicular lesions which burst in the course of a few hours, forming a golden yellow crust, are well known.

The classical treatment of impetigo in this country is to remove the crusts and apply weak ammoniated mercury ointment. Although in hospital practice one never sees the successes of this treatment, judging from the number of failures either attending the O.P. department or admitted into hospital, I think that in the early stages of impetigo, using hydratg. ammon. dil., is absolutely contraindicated. In the first place, a surprisingly large number of people are sensitive to ammoniated mercury (proved by patch testing), the resulting dermatitis complicating the original impetigo; and secondly, the ointment provides an excellent medium beneath which the vesicular fluid spreads and infects previously healthy skin. The cure of impetigo does not seem to depend on destruction of the organism in situ by the medicament, but on the natural defence mechanism of the skin overcoming the streptococcus. Thus, the aim of treatment is to aid this process and to keep the vesicular fluid away from healthy, but at first non-resistant, surrounding areas. This, with small lesions, is best achieved by applying elastoplast and renewing when necessary until the disease is cured. With larger areas, frequent applications of mild astringent antiseptic lotions should be used, such as weak solutions of lotio eau d'Alibour—copper sulphate 3 gr., zinc sulphate 12 gr., aqua camph. ad 8 oz., silver nitrate ½ per cent. in distilled water, or a weak solution of mercuric perchloride. In the first few days it is a disadvantage to remove the crusts, as the lesions become dry in the course of two to four days, and the crusts separate naturally, leaving underlying healthy skin. Mild antiseptic ointments such as zinc with ichthyol help this separation in the dry crusted stage.

In severe cases sulphonilamide 15 gr. t.d.s. for five days is very helpful in raising the natural resistance to the streptococcus. Colonel L. Colebrook has recently informed me that he has obtained good results using sulphonilamide powder locally incorporated in a paste such as sulphonilamide powder 10 per cent., kaolin 40 per cent., glycerine 40 per cent., cod liver oil 10 per cent. In applying this, the crusts are removed before each thrice daily application. I have not yet tried this on a sufficient number of cases for comparison with those treated with astringent antiseptic lotions.

It is necessary to impress upon the patient the danger of his spreading infection. He must have his own towel and other toilet articles; shaving is not allowed over any affected area, and in the scalp the hair is cut short to facilitate application of the preparations.

When impetigo is secondary to some other dermatosis, treatment follows lines indicated above. When secondary to scabies, the lesions are usually

cel thym [illegible] and occur primarily on the [illegible] of the acrons the [illegible] be involved by auto-inoculation [illegible] it is often difficult to find a typical burrow and the diagnosis of [illegible] must be made on the history and distribution of the lesions [illegible] the palms is almost diagnostic The first essential in treating [illegible] matter how severe the secondary impetigo is to treat the [illegible] the benzyl benzoate lotion and then deal with the impetigo

Dermatomycosis of the Foot

Ringworm infection of the foot is endemic in the Royal Navy and [illegible] Medical Officers will have [illegible] this condition at some time in their Service careers Valuable work in the field has been done by Naval surgeon [illegible] R Fraser [4]) and the numerous preparations advocated for treatment are indicative of the difficulties

Clinically the signs vary from a few scales of dry dead skin usually between the fourth and fifth toes to extensive weeping areas denuded of epithelium with formation of pustules and [illegible] involving the skin of the whole foot and ankle This stage is often further complicated by dermatophyticide reactions of the hands characterized in the mild degrees by the presence of sago grain vesicles in the skin of the palms and the interdigital surfaces of the fingers and in the severer forms by confluence and bursting of these vesicles, leaving raw weeping areas Occasionally the secondary dermatophyticide reaction involves all parts of the body

Accurate diagnosis is important before treatment is started because the therapy of dermatophytosis is absolutely contraindicated in most other dermatoses commonly confused with fungous infection Before considering treatment I will diverge to indicate the easiest method of confirming the diagnosis A thin scale from the active edge of the disease or the roof of a vesicle in the region of the toes is mounted in 20 per cent potassium hydroxide between a slide and cover glass left for a half to one hour and examined microscopically With patience the fungus can be seen as a highly refractile often branching mycelium running *through* the cells of the epidermis The fungus cannot be isolated from the secondary side reaction

In the treatment of this condition prophylaxis is of utmost importance and this necessitates the patient taking care not to disseminate his own infection The commonest source of the disease is the bathroom Men are in the habit of walking barefoot on duckboards and matting leaving fungous elements on a wet warm medium very favourable to their survival When the disease is present in any ship or establishment the bath mats and duckboards should be destroyed and everybody should be instructed to dry himself standing in the bath stepping directly into his own slippers Walking about barefoot should be prohibited as much as possible In shower baths the deck is swabbed frequently with some suitable antiseptic solution and all duckboards abolished

When the disease is established treatment depends on the activity of the condition The fungus lives in the dead layers of epithelium and sometimes in the nails, and the aim of treatment is twofold to kill the fungus

to stimulate exfoliation of the affected skin before the fungus can spread to [illegible] healthy areas

In the [illegible] with dry white scaling skin between the toes the patient is [illegible] one freshly boiled pair of cotton socks daily to prevent [illegible] healed areas In the evening all loose dead skin is carefully [illegible] the toenails are kept short A Whitfield's type of ointment is applied Salicylic acid 6 per cent benzoic acid 12 per cent and equal parts of hydrous wool fat and petrolatum to 100 per cent or one of the many proprietary modifications of this is used These are varied from 1 per cent to double strength depending on the degree of inflammatory reaction In the morning after washing the feet are carefully dried particular attention being paid to the interdigital spaces then swabbed with spirit and allowed to dry The following dusting powder is then rubbed into all affected parts Thymol 1 per cent sublimed thiosulphate 4 per cent boracic [illegible] to 100 per cent This routine must be continued long after the disease is apparently cured

In the acute stage when there is weeping and fissure formation in the interdigital spaces the patient is kept in bed and probably the best single application is 1 per cent brilliant green applied three times daily soaked on gauze to each affected interspace When the inflammatory reaction has subsided the ointment or powder can be used cautiously care being taken not to provoke a dermatitis

With very severe staphylococcal infected cases rest in bed is essential all dead skin is removed and bullæ opened The feet are treated with eusol baths 1 4000 potassium permanganate solution or wet dressings of ½ per cent silver nitrate solution With lymphangitis and adenitis sulphonamide by mouth is very helpful When the inflammatory reaction becomes quiescent active fungicides for complete cure are used as above

The dermatophyside reactions of the hands and body are probably the result of blood borne toxins from fungus living in the skin of the feet and they do not contain vital mycelial elements hence the application of fungicidal preparations to these areas is contraindicated They usually clear up with the primary dermatophytosis and are treated as a dermatitis

Contaminated woollen socks must be destroyed or soaked for several days in some antiseptic solution before being worn after cure Scrubbing the inside of the shoes with 10 per cent formalin is sometimes advocated but the danger of producing formalin dermatitis must be remembered If freshly boiled cotton socks are worn daily such a procedure is not usually necessary

Dermatitis

In a paper such as this it is obviously impossible to give more than a brief outline of the large subject covered by the word dermatitis There are many types and causes of inflammation of the skin but for all of them the general principles of treatment are essentially the same

Just as rest in bed is of prime importance in the treatment of inflammatory conditions of other organs so is it the first essential in treating any extensive dermatitis Raising the foot of the bed on blocks is an additional help in varicose and gravitational dermatitis Next in importance come local

applications. A good working rule is that only lotions or pastes should be applied to weeping surfaces. In the initial stages of activity with weeping erythematous skin the patient is treated with frequent dressings of gauze soaked in one of the following lotions: Silver nitrate ½ per cent solution in distilled water, liquor aluminium acetate (Burrow's solution) or a lotion advocated by R. Hallam [5] consisting of trillets earth 1 oz., zinc oxide 1 oz., glycerine ½ oz., water to 6 oz. The great disadvantage of the commonly used calamine lotion in the early stages is that it tends to form large adherent crusts with the exudate beneath which pus often accumulates. Before each renewal of dressing any crusts or tags of loose dead skin are removed.

If the pubic region or scalp is affected the hair must be cut short and with involvement of the face shaving is not allowed. The use of soap and water on any affected area is forbidden in the acute stage.

With subsidence of this vesicular weeping stage subsequent treatment depends rather on the type of dermatitis. A non-irritative paste such as pasta zinci co. B.P.C. is very useful in the common traumatic dermatitis due to contact with irritating substances in the atopic (allergic) type in the gravitational and in the varicose types. Tar or ichthyol may be incorporated in this paste. Crude coal tar often clears up chronic cases. Other preparations worth trying are zinc with ichthyol ointment and an ointment consisting of crude coal tar 2 parts, hydrarg. ox. flav. 1 part, lanoline 10 parts and soft paraffin 10 parts.

In the chronic stages of schorrhoeic dermatitis sulphur incorporated in various bland ointment bases is the classical remedy and the accompanying dandruff responds well to antiseptic lotions such as that given by Roxburgh [6]: acid salicyl. 20 gr., hydrarg. perchlor. ½ gr., ol. ricini 10 to 60 m., ol. lavend. 5 m., spirit. vini rect. ad 1 oz.

Drugs are of doubtful value. Sulphanilamide is given in secondarily infected cases especially where there is adenitis of the draining lymphatic glands. Various forms of protein shock therapy have been tried in chronic cases and they like autohemotherapy are usually most disappointing.

For sleeplessness one of the milder hypnotic drugs is indicated, however when using any drug in an obscure dermatitis it is important to remember that many drugs are capable of causing dermatitis in an idiosyncratic individual.

Diet has been said by many to play an important role, especially in seborrhoeic dermatitis; starchy and carbohydrate foods being restricted. Alcohol, highly seasoned foods, sauces &c. are forbidden during the acute stages of any dermatitis.

Removal of septic foci may bring about cure of a chronic case. It is better not to deal drastically with such foci in the acute stages, since a temporary relapse is sometimes caused.

In concluding this very brief outline of the treatment of dermatitis it must be remembered that many people are idiosyncratic to certain substances, contact with which produces dermatitis. Such cases can often be discovered by careful history taking and proof of the cause is obtained by applying a patch of the suspected material to a normal area of the patient's skin, remove in twenty four to forty-eight hours and examine for underlying dermatitis.

This proof is very important both for deciding the often difficult question of attributability and for the prevention of a recurrence of the eruption

Alopecia Areata and Warts

Before closing I would like to remind readers of two facts The first is that ringworm of the scalp is extremely rare after puberty The bald patches of ratings are in the great majority of cases due to alopecia areata The hair usually takes three to six months to grow treatment is unnecessary apart from the psychological aspect and the prognosis is almost invariably good

The second is that many people are able to cure warts by "charming" and this is the easiest method to use in a ship or in cases with large numbers of warts The principles are to make the patient "wart conscious" and to convince him that the warts will disappear in three to four weeks after the treatment is started Folklore contains many amusing "charms" all of which have these two underlying principles f usually instruct the patient to paint each wart every day with brilliant green and impress upon him the importance of never omitting a single wart during this daily painting If the wart fails to react it can easily be removed by curetting after infiltrating the base with local anæsthetic

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PSYCHIATRY AN ADVERTISEMENT

By Surgeon Lieutenant Commander G C TOOTH R N V R

In this paper certain difficulties in the practice of psychiatry will be considered and suggestions made as to how they could be remedied A list of common symptoms of functional' illness will be given with a view to showing in what types of condition the opinion of a psychiatrist should be sought The need for such an exposition has been brought home to the writer during eighteen months experience as neuro-psychiatrist in a Hospital Ship on a foreign station

Aims of Psychiatry

In its broadest sense the principal aim of psychiatry is to discover and correct maladjustments between individuals and their environments. Difficulty or failure in making such adjustments is the commonest cause of mental illness Readjustment may be achieved either by influencing the personality of the individual or by changing the environment In practice, a compromise has nearly always to be made At one end of the scale are the mental defective and chronic psychotic for whom an entirely artificial

environment has to be created, at the other are the so-called "normal" persons whose normality, as judged by their fellows, depends very largely upon the degree to which they are willing and able to modify their personalities to fit in with their surroundings.

It is not claimed that all cases of personality maladjustment in the intermediate group are modifiable by psychotherapy; the personal factor in treatment is too great and methods are still too unstandardized for results to be guaranteed. However, especially in the highly organized community such as a ship, a maladjusted person is a weak link and a potential source of discomfort, and for these reasons alone he is worthy of attention which to be effective must be early.

Common Misconceptions

It is regrettable that there are still medical men who regard the psychiatrist as at best a specious rogue stealing a precarious livelihood from real doctors who have been doing that kind of work for generations. His failures are held up to universal opprobrium as proofs of his obscure and disreputable practices. Such ignorance may be considered a sign of mental health in a layman, but at a time when the country is paying large sums for the care of psychoneurotics at home and every branch of the fighting Services has its Psychiatric Unit, the attitude of amused tolerance under which some doctors hide their lack of knowledge of such matters is no longer justifiable.

Diagnostic errors are largely due to lack of proper education. It is only in the last few years that any effort has been made to present the student with anything more than a list of difficult names for discriminating end states; even now it is rare to find a psychiatrist who is prepared to demonstrate and teach on psychoneurotic material. Few general physicians have the knowledge or inclination to treat such patients, and once the diagnosis is established—usually by exclusion—their one object is to get rid of them. This attitude coupled with the usual textbook practice of relegating functional to the last place on any list of causes of an equivocal symptom in such ones, regardless of the fact that it may be the commonest cause—has helped to foster the mistaken idea that psychoneurotic states are less medically important than those in which a lesion can be demonstrated. By extension of this fallacy there are many doctors who maintain that psychoneuroses are not illness at all—a belief that dates back to the dark ages of Medicine. Another erroneous idea is that so-called functional illnesses can be diagnosed only by exclusion. While this ensures the performance of the maximum number of investigations and is tolerated in fact often demanded by patients in private practice, it has no place in public work where time and money are important.

Psychiatric Evolution

In psychiatry, as in the rest of Medicine, the focus of interest has shifted from the classification of terminal conditions to a meliorative approach along the lines of Mental Hygiene and early treatment. It is therefore of paramount importance that individual symptoms should be recognized as points to

mental illness before the condition becomes advanced enough [illegible] nosological label

One of the chief causes of delayed diagnosis and difficulties in treatment is that the patient has usually been seen by other doctors and has often had a ' thorough investigation —an ordeal by ancillary aids—before being informed that it is only nerves and then sent to a psychiatrist The chance of recovery of a psychoneurotic is inversely proportional to the number of doctors he has seen Particularly in anxiety states for which a properly conducted diagnostic interview is the best form of treatment the results if the patient is seen early in the illness and exclusively by a psychiatrist, are very good in fact a cure may often be effected in a single interview On the other hand, the chronic anxiety state so often the result of bromides and butchery is one of the most difficult problems with which the psychiatrist has to deal The web of deception in such cases although not intentionally woven may take years to disentangle

A Method of Ensuring Early Treatment

It is submitted that in most cases in which the symptoms are indeterminate and may be either psychogenic or organic in origin it is less potentially harmful to the patient to be given a psychiatric examination than to be put through the more elaborate tests to exclude possible organic conditions For example a patient complaining of recurrent abdominal pain due to a subacute appendicitis is much less likely to suffer permanent harm as the result of an interview with a psychiatrist than is the patient with identical symptoms due to an anxiety state with a spastic colon on whom a laparotomy is performed

It is urged that in all doubtful cases in which the symptoms could possibly have a psychogenic origin the patient should be examined by a psychiatrist before a detailed history is taken and more than a routine physical examination is performed

In advocating such a routine it is not intended to belittle the importance of physical examination but the manner in which it is carried out and the result formulated to the patient is a vital step in the treatment of a psychoneurotic and is best left to the psychiatrist It should hardly be necessary to point out that this suggestion does not apply to patients suffering from acute abdominal conditions aids incipient heart disease or other obvious organic diseases.

Symptoms Suggesting Mental Illness

When it appears in the full blown textbook form mental illness presents no particular diagnostic difficulties Unfortunately the earliest manifestations are often purely somatic it is in these cases that mistakes in diagnosis arise A Medical Officer cannot be expected to attach the correct diagnostic labels to every case of mental illness with which he comes in contact this is the responsibility of the specialist However there are certain common symptoms which may be either functional ' or organic in origin and of these every doctor should be aware The following lists of symptoms are by no means exhaustive for the conditions they indicate, those that are most commonly misinterpreted and are at the same time the usual presenting

[illegible] It is suggested that [illegible] any of these symptoms or syndromes should be referred to the gastroenterologist at the [illegible]

[illegible]—*Invalidity States*

(1) *Functional and Dyspepsia*—Attendance at the Out-Patient Department [illegible] of the hemorrhoid column that psychosomatic [illegible] these symptoms. Repeated examination of the [illegible] and an anorectal [illegible] medically [illegible] The [illegible] of the patient is assured after the first examination [illegible] which is always present has taken [illegible] persuasion.

(2) *[illegible]*—Complaints described as a feeling of faintness [illegible] sensation of [illegible] in the epigastrium rather than a frank loss of consciousness [illegible] the patient's group of symptoms is almost invariably accompanied by a feeling [illegible]

(3) *Abdominal Pain*—The [illegible] of eliminating psychogenic causes in cases that may require [illegible] through [illegible] Functional Dyspepsia is [illegible] a large range of symptoms in most of which a lesion could [illegible] be [illegible] In such patients unpleasant and costly investigations [illegible] and the psychogenic factors have been eliminated. If these are properly dealt with a spontaneous remission will often occur although [illegible] usually to be combined with the common pathologic [illegible]

It is remarkable that a surgeon [illegible] satisfied both by patients and doctors to the suggestion that [illegible] is responsible for a very large proportion of these illnesses. [illegible] come only in flashes to relieve the gloom of [illegible] The following extract from Sir Walter Scott's Journal is typical of many [illegible] understanding. These things arriving after dinner rather disagreed with digestion, however simple and solid my fare had been. I [illegible] for this connection between my feelings and my stomach. But when [illegible] nightmares, one puts the lule in mouth and makes me sick.

(4) *Headache*—This may be a symptom of chronic illness, but it is such a universal accompaniment of all forms of minor chronic illness, if there is no obvious organic cause, psychiatric advice should be sought, preferably before the more heroic methods of investigation have been employed.

(5) *Increased Frequency of Micturition and Impotence*—The tendency in many ways admirable towards the employment of the cystoscopic methods in the diagnosis of internal diseases is a [illegible] backfire. The detailed examination of any part of the body if a neurotic is liable to focus undue attention upon that part. Instrumentation of the urogenital tract, which is often the seat of symptoms in such patients, is particularly undesirable.

In this type of case, if general examination and testing the urine are inconclusive, psychogenic causes should be ruled out before resorting to instrumentation.

Sir Walter Scott's Journal. Phoenix Edition 1826, p. 172.

B—Hysteria

(1) *Fits—Hyperventilation—Paresthesiæ*—When they occur [illegible] these symptoms may present a hard diagnostic problem. Of the [illegible] who overhear the a few complain of respiratory difficulty but the majority come to the doctor when they experience the early symptoms of tetany such as numbness and tingling of the hands and feet or carpopedal spasm.

The relative frequency of hysterical fits in the Navy bears [illegible] of the pseudo-neurological conversion type of reaction.

(2) *Retention of Urine*.—This symptom is found much more frequently in female than in male hysterics. When it occurs in a man once such [illegible] has been excluded by the passage of a catheter and it is clear that the patient is not suffering from some underlying neurological condition, psychiatric consultation should be requested. The more often a hysteria is observed the more difficult will be the cure.

C—Asthma—Eczema—Urticaria

There can be few physicians nowadays who would dispute the contention that the so-called allergic diseases are nearly always found in people who show other signs of personality maladjustment. Yet it is only very rarely that a patient with such symptoms is sent to a psychiatrist, if indeed such a course has ever occurred before he has been subjected to every conceivable investigation, even though the psychogenic factors are obvious to everyone including the doctor. This reluctance to see the obvious is probably due partly to the layman's prejudice against the admission of mental illness, is to the modern scientist's preoccupation with what might be called the search after [illegible]. It is not claimed that all such cases can be cured by psychotherapy, but the recognition and correction even if only the crude misunderstanding, practical difficulties in a patient's environment will often relieve the symptoms to such a degree that the ordinary palliative measures are enough to enable him to live a normal life without the need for some desensitization. However, as in every other psychiatric problem, the chances of a successful outcome are much greater in a young person who has not had previous medical treatment.

Circumcision—A Warning

If a member of H.M. Forces asked to have his face lifted because he disliked the look of it, it is safe to predict that his request would be refused and that he would be regarded with a certain amount of suspicion and he might even be considered suitable for psychiatric attention. Similar requests for plastic operations upon the genitalia appear to come under no such suspicion and are sometimes carried out on the flimsiest pretexts.

Even the most bigoted anti-Freudian would not deny the great frequency of sexual preoccupation in all forms of mental illness; this request for self mutilation may spring from an obsessional wish to improve upon the handiwork of nature, in a schizophrenic it may satisfy the desire for a penance or it may simply be an expression of psychopathic hedonism.

An attitude of extraverted heartiness is undoubtedly preferable to one of prurient curiosity in these matters, but the natural urge of the surgeon to

vigorous [illegible] should be tempered with caution and the realization that the despair [illegible] may be the thin end of a very [illegible]

SUMMARY

The [illegible] psychiatrist is referred and the importance of early diagnosis in mental illness is stressed

Some cases of delirious diagnosis are given and [illegible] they could be remedied

In order to ensure [illegible] early stage [illegible] that patients showing the following symptoms should be referred [illegible] psychiatrist

Palpitation	Abdominal [illegible]
Dyspnœa	Intestinal [illegible]
Hyperventilation	Retention of [illegible]
Fainting	Impotence
Vertigo	Asthma
Fits	Eczema
Headache	Urticaria
Paræsthesiæ	

A warning is given against the misuse of [illegible]

NOVOCAIN INJECTIONS FOR MYALGIA

By SURGEON LIEUTENANT T A BEST R N V R

The term myalgia may be used to describe that group of painful diseases of muscles and tendons of which fibrositis musculi [illegible] rheumatic neuritis and lumbago are typical and also those minor injuries usually referred to as strains or pulled muscles These conditions give rise to a considerable amount of disability by which [illegible] be incapacitated at a time when he can least be spared In war [illegible] very often make it impossible to arrange for the usual treatment by [illegible] physical methods however it is possible in the great majority of cases by injecting with a local anæsthetic the myalgic areas described by Gooll which are the source of the pain to enable a man to return at once to duty who would otherwise have to be placed on the Sick List Local anæsthetics have [illegible] course been used in myalgia for some years however the results I have seen are not impressive unless the solution is injected accurately into these special areas It is then truly astonishing how a very small quantity can immediately relieve some very painful and disabling condition

The patient suffering from myalgia usually complains of stiffness and aching over a fairly wide area and severe pain on carrying out certain movements This pain which has the characteristics of referred pain is due to myalgic areas in one or more muscles and is felt in the skin innervated by the spinal segment from which the muscle obtains its motor supply This area is often hyperæsthetic and unless the referred nature of the pain is recognized treatment may be given to the painful skin instead of the diseased muscle Sometimes tingling and numbness are also symptoms

The pathology of these areas is not yet understood but it has been suggested that they are associated with vaso-constriction and the surrounding muscle fibres are often felt to be in spasm They may be single or multiple

and are well defined extremely tender usually about 1 cm or less in extent near the origin insertion or border of the affected muscle They may be recognized objectively by the fact that digital pressure will make the patient flinch and screw up his face while pressure on the surrounding muscle is described as painless or perhaps uncomfortable The pain is severe, even agonizing often radiates to the area originally complained about and persists after digital pressure is released When examining a man complaining of rheumatism or a strained muscle the muscles which have a segmental innervation corresponding to the area of pain are palpated with one finger Any area found are marked with a skin pencil They may be at a considerable distance from the painful area of skin the patient usually has no knowledge of their existence until they are pressed upon For example an area in the gluteus medius may give rise to severe pain felt on the outer side of the leg

Treatment can be carried out even where facilities for medical work are poor The only apparatus required is a hypodermic syringe and a sterile solution of local anæsthetic—the most generally useful solution is 1 per cent procaine in normal saline which may be kept in rubber-capped bottles preserved with 0 5 per cent phenol Adrenalin should not be included The skin is sterilized over each painful mark the myalgic area located precisely with the finger tip and the novocain is injected into it slowly through a fine needle It is essential for success that this should be done accurately The quantity necessary will vary with the area being treated however the least quantity should be used in which will abolish completely all tenderness—usually ½ to 2 cc In some cases when the pain is abolished the relaxation of the treated muscle will sometimes enable other myalgic areas in the deeper muscles to be found and injected If these have been correctly treated they will now be entirely painless and the patient should be able to carry out all the movements which previously caused pain For the next twenty four hours there may be a bruised feeling in the area injected very occasionally after the anæsthetic has worn off there may be a return of severe pain for an hour or two rather similar to that sometimes experienced after dental extractions under local anæsthesia It seems probable that it is due to injecting the solution forcibly into dense tissue and can be avoided by using a fine needle and injecting slowly If the usual precautions are taken to avoid introducing infection into the tissue or injecting the novocain directly into a large vein no other complications should occur

The following short notes on some cases may perhaps illustrate the value of this method of treatment

(1) A case of pain in the chest

A 2nd Hand R N P S aged 23 reported at 1700 complaining of severe pain in the front of the chest on breathing which prevented the normal use of his arms Two small myalgic areas were found one on either side of the sternum in the origin of the pectoralis major These were injected with 1 per cent novocain ½ cc in each area The pain immediately ceased and he was able to return at once to duty

(2) A case of chronic headache

C Motor Mechanic H O aged 24 Complained of severe headache which he had had for three days He attributed this to a blow on the top of the

head received while [illegible] in the engine room He also stated that he had been in hospital for six weeks about six months previously suffering from similar severe headache following an attack of tonsillitis No signs of injury to the scalp or skull could be found but there were two myalgic areas in the left trapezius on the outer border near its mid point These were injected with 5 c c of 1 per cent. novocain and the headache disappeared at once and has not returned (eight weeks)

(3) A case of acute torticollis

F Cpl R.A.F aged 30 Reported complaining of a very painful stiff neck which came on during the night His head was held over to the right and rotated to the right Any attempt to straighten the neck caused severe pain Two rather large myalgic areas were found in the upper third of the right trapezius at its outer border and were injected with 2 c c each of 1 per cent novocain Pain was at once relieved and movements returned to 75 per cent of the normal He was able to resume full duty no further treatment was required

(4) A case of strained muscle (traumatic myalgia)

S Marine aged 18 Fell about 10 ft at gun drill injuring his back He complained of pain on walking in the left buttock and thigh No bruising was present but one myalgic area was found in the attachment of the gluteus medius below the iliac crest This area was injected with 1 c c of 1 per cent novocain which gave immediate relief from pain he was able to resume normal duty at once

(5) A case of neuralgia of the forearm

K Marine aged 26 complained of pain and tingling in front of the left wrist and lower part of forearm which ran down to the little finger and prevented him from lifting any weight with that hand It had been present for six weeks Six years before he had had a shot gun injury to the front of the wrist and a large number of shot were still in the tissues He said that he had had several removed as they were thought to be pressing on nerves He seemed quite convinced that damaged nerves were still the cause of the trouble and that it was incurable There was a large scar over most of the front of the wrist diminished tactile sensation over part of the hypothenar eminence and he could not adduct his little finger Two myalgic areas were present in the common flexor origin about ½ in below the internal epicondyle pressure on these reproduced the pain One area only was injected because he was very nervous the pain was improved but not cured Two days later at his own request the second was also injected At once he was able to lift a heavy weight with the affected hand without pain He has remained free from pain since (five weeks)

(6) A case of pleurodynia

H Lieutenant R N V R aged 36, complained of cough with aching pain in front of left side of chest which became very severe on coughing He thought that he had a return of an old pleurisy Lungs clear Heart normal Myalgic area in the left erector spinæ about 2 in from the mid line at the level of the 5th thoracic vertebra This area was injected with 2 c c of 1 per cent novocain The pain entirely disappeared and did not return

(7) A case of pseudo-sciatica.

A Lieutenant R.N.V.R. aged 34 complained of pain down the back of the thigh outer side of the leg and heel on walking for five days. Myalgic areas were detected one in the gluteus medius just below the iliac crest and two in the tensor fasciæ femoris along its anterior border. These areas were injected with a total of 5 c.c. of 1 per cent. novocain. The pain disappeared and did not return.

(8) A case of backache.

S. Lieutenant (E.) aged 26 complained of stiffness and pain on movement in the left shoulder blade area for twenty four hours. A myalgic area 1½" in from the mid line in the erector spinæ at the level of the 7th thoracic vertebra was located. This area was injected with 1 c.c. of 1 per cent. novocain and all symptoms cured.

(9) A case of backache.

D. Leading Signalman aged 29 complained of low backache particularly in the early hours of the morning which became very bad after exertion and had been troublesome for several months. Extension of the spine caused pain over the 5th lumbar spine as also did full rotation or bending to the left. A myalgic area was found in the outer border of the right quadratus lumborum and injected with 2 c.c. of 1 per cent. novocain. Full painless movement at once became possible and the backache at night was cured.

(10) A case of pain in the leg.

W. Sub Lieutenant R.N.V.R. aged 26 complained of pain on walking at the back of the left knee and calf. This had recurred at intervals for several years and the present attack had lasted twenty four hours and had made him limp badly. Myalgic areas in the outer border of the gastrocnemius at its mid point at the insertion of the semitendinosus and in the outer border of the inner head of the gastrocnemius were located. These areas were injected with a total of 2 c.c. of 1 per cent. novocain and the symptoms were immediately cured.

Conclusions

(1) Injection of novocain is advocated in the treatment of patients suffering from myalgia.

(2) Myalgia is referred pain originating in small well defined diseased areas of muscle known as myalgic areas.

(3) The position of these may be recognized objectively.

(4) Notes on some cases are given.

I am very much indebted to Lieutenant M. Good R.A.M.C. for his advice and for demonstrating to me on many occasions his methods of diagnosis and treatment.

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Clinical Notes and Cases

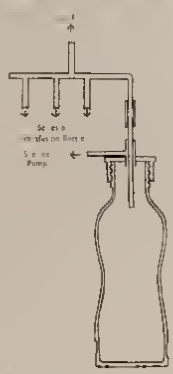
[illegible] OF HUMAN SERUM FOR THERAPEUTIC [illegible]

By C. A. GREEN, M.C., [illegible] U.S.N.R.F.
(From the Naval Medical School)

[illegible] with the provision of blood banks in repl[illegible] heads [illegible] method adopted from that described by Ch[illegible] (1940) [illegible] limited quantities of blood [illegible] may be [illegible]

[illegible] of serum ten to twelve volunteers [illegible] from the [illegible] of the R.N.H. spital for [illegible] serum was requ[illegible] in [illegible] storage.

The [illegible] type of blood transfusion [illegible] 500 [illegible] from each [illegible] taken under sterile [illegible] 180 [illegible] per cent [illegible] in 0.85 per cent solution [illegible] blood [illegible] 5 c.c. [illegible] was placed [illegible]



Apparatus used for collection of serum after clearance and sterilization by passage through a Seitz E.K. filter connected in closed circuit with Arm's type [illegible]

The bottles were transferred to the laboratory and the [illegible] specimens were kept in the ice-chest. The serum from the 5 [illegible] was separated for the determination of the Kahn reaction. Any Kahn positive specimen of citrated blood was excluded from therapeutic use but was not [illegible] or used as it proved perfectly satisfactory for the making of bacteriological [illegible]. The remaining specimens of citrated blood were pooled and thoroughly mixed in a sterile enamel container fitted with a lining of gauze stretched over a wire

[illegible] the pool [illegible] blood [illegible]

REFERENCE.

[illegible] and Dible J. H. [illegible] 2 204

THE PREPARATION OF DESICCATED PLASMA

By Surgeon Lieutenant Commander John A. Cabell, R.N.

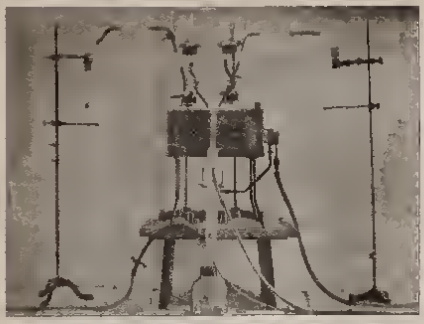
and

Surgeon Lieutenant Commander W. D. Lynn, R.N.

[illegible] presents nothing [illegible] who wishing to prepare [illegible] [illegible] by the more familiar articles [illegible] replacement in the [illegible] of [illegible] [illegible] [illegible] search of blood [illegible] [illegible] some [illegible] [illegible] storing of [illegible] [illegible] possess [illegible] apparatus for [illegible] desiccated plasma [illegible] our problem. An apparatus similar to that [illegible]

[illegible] tory

[illegible] enable [illegible] ers and [illegible] to get the [illegible] pressure. [illegible] also [illegible] These [illegible] ther [illegible]



Improved apparatus [illegible] in place

Volumetric blood [illegible] and establishments. [illegible] The blood is taken into a [illegible] about [illegible] of 98 per cent solution [illegible] stopper with two holes and a bel[illegible] kept flowing in a continuous stream [illegible] and by a small siphon [illegible] that delivers the blood [illegible] obtain [illegible] removal [illegible] forty-eight [illegible] research [illegible] Any blood that shows [illegible]

thicker than others possibly due to the fat content. As we cannot clear this, such specimens are mixed with lighter plasma. We have not tried to isolate the various blood groups, though each completed bottle has the donors' groups on the label. No regular bacteriological examination is carried out for sterility of this wet plasma. Several random samples have been tested with negative results except for one which was grossly contaminated by sticking air through a defective cap.

During the cooler winter months 400 to 500 c.c. of plasma can be dried in about nine hours. With the onset of the hot weather this time has been considerably prolonged. As the room temperature rose, we found that the water from condensation in the collecting bottle below the Liebig's condenser was evaporating rapidly in the low pressure. This bottle is now kept immersed in a mixture of ice and salt, and the cooling water for the condenser is led through a coil in this freezing mixture. Drying is considerably hastened by this. Between the collecting bottle and the Bellatori we have placed a long tube with calcium chloride and also a trap containing calcium chloride. This prevents moisture from entering the machine. This is important since the pump rotates in oil and the slightest amount of moisture causes the valve to stick, rendering the engine temporarily useless.

Little care is required during the actual drying except to regulate the flow of steam and to change the freezing mixture whenever necessary. The pump requires no attention at all, and if the temperature in the condenser and collecting bottle is kept sufficiently low there is no need to change the calcium chloride. About 90 per cent. of the original volume of the plasma is usually collected as water of condensation. When the drying process is completed care must be taken to raise the pressure in the system to normal in such a way that contamination is prevented. The air is filtered through a glass tube lightly packed with cotton wool and autoclaved. The connecting tubes and stopper are then removed from the bottle containing the dried plasma and the rubber cap and trap previously described are inserted under sterile conditions.

Several samples of this desiccated plasma have been dissolved and tested bacteriologically for sterility some months after drying. They have all been found sterile. When the plasma is reconstituted it is a dirty grey colour and contains pieces of fibrinous material floating about in it. These can be removed by using as a filter is used when transfusing. The fibrinous fragments tend to block the tubing in needles.

We do not express any opinion about reactions. So far we have had only one case of giving this plasma and the results were excellent, no evidence of reaction. Several patients have received relatively large amounts of plasma intravenously without any untoward effects. We have not yet made any study of protein distribution during drying by keeping the temperature at 37° C. This means that the temperature inside the drying bottle should be kept between 35 to 40° C. Where drying time is a matter of importance and dissociated plasma there is no doubt that the temperature should be raised to 50 to 60° C. with a fair amount of risk, as we have emphasized that when violent ebullition occurs the plasma should be kept at a lower temperature.

[illegible] plasma at room temperature for long periods without [illegible] every [illegible] number. It has been left exposed on a [illegible] in sterile gauze and later sealed without [illegible] [2]). They also found that reconstituted plasma [illegible] by the addition of sodium

Briefly the advantages of dried plasma are

(1) It requires [illegible] are in storage

(2) It is light [illegible] is easily transported

(3) It [illegible] to the recipient any blood [illegible] which the [illegible] plasma or malaria [illegible] rendered fit for [illegible] of [illegible]

We [illegible] Medical Co for the [illegible] of the [illegible] for [illegible] Medical [illegible] contributing so largely to [illegible] study has [illegible] with

BIBLIOGRAPHY

[illegible] *Med Journ* Mar [illegible] 1941 **116**, [illegible]

[illegible] and Sebon *J* [illegible] 1941 [illegible]

A RARE CONGENITAL ABNORMALITY

By Surgeon Commander W R S Fancourt R N

A Matelot rating aged 18 reported on December 9 1940 complaining of [illegible] pain around the right elbow joint He stated that on December 7 1940 [illegible] from a drifter in heavy weather he had struck his right elbow for [illegible] past a coal bunker He was able to continue his duties at the time [illegible] following day the elbow had become very painful On examination there was [illegible] swelling and [illegible] around the elbow joint which was flexed and to active or passive [illegible] were possible owing to pain [illegible] lateral

[illegible] joint showing a patella [illegible]

X-ray [illegible] but there were two bony loose [illegible] and the other posterior to the lower [illegible] of the joint. He stated that he [illegible] during the War of 1914-1918. It was not [illegible] he was unable to extend [illegible] X-ray examination when the [illegible]

[illegible] evidence of old or recent [illegible] present. The observation

[illegible]

[illegible] addition [illegible] non-proc[illegible] he was [illegible] 1st Great War. The [illegible] of the joint [illegible] in to the old [illegible]

[illegible] bone. Its shape resembles that of a [illegible] It [illegible] changes are also present. It [illegible] [illegible] a battle shrapnel fissure [illegible] [illegible] Rabidge of Bristol and [illegible] [illegible] the clinical [illegible] *Patella Cubiti* [illegible]

[illegible] showing a patella cubiti in the normal position [illegible] the tip of the [illegible]

The ulcerative loss of the hair cells shows [illegible] individuals the bone being sometimes [illegible] is frequently bilateral and associated [illegible] with sign. The above X ray photo [illegible] points to consider these congenital abnormalities [illegible] *Patella Cubiti* [illegible] material in the case [illegible] the [illegible] fossa.

AN IMPROVISED ANÆSTHETIC APPARATUS

A NOVEL USE OF A SHIP'S SALVAS OXYGEN UNIT INTO A CIRCUIT ANÆSTHETIC APPARATUS

By Surgeon Commander H. FARAY-PRICE, M.R.C.S., R.N.V.R.

The other day [illegible] in the North with no possibility of hospital ship [illegible] one of our officers sustained a fracture of the left femur with a compound comminuted fracture of the tibia and fibula.

He was given morphine [illegible] on the flight deck and transferred in a Neil Robertson stretcher to the sick bay. Here he was given pentothal followed by oxygen bubbled through ether before removal from the stretcher. About an

hour and a quarter was spent in cleaning the limb and doing what we [illegible] for him

After two days the shipwright's department had made a frame splint [illegible] it was decided to pull the [illegible] from toes to knee in plaster of paris [illegible] the femur in extension

The patient asked specially that he should not have ether. The only N O we had in the ship was one 60 gallon cylinder belonging to the Dental Department. We had to do everything in a coal and it was a particularly [illegible] With the help of the Engineer Room Department we were able to devise [illegible] oxygen closed circuit apparatus from the Service Subsis Unit

It must be realized that we required two and a half hours or so of a [illegible] and had to depend on pentothal and gas oxygen with only 50 gallons of N O in cylinder

The accompanying drawing will explain how we devised the apparatus Diagram A shows the layout of the Salvus as used for fire-fighting The oxygen cylinder and CO_2 absorbic tank are fixed on a metal plate which is slung near the fireman's back and held by shoulder straps

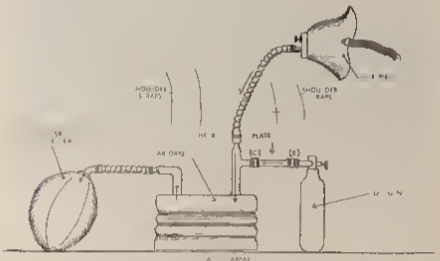


FIG A Diagram of the component parts of the Service Salvus Unit

[illegible] oxygen is set to deliver 2 litres per minute [illegible] Another hose [illegible] with the oxygen diluter is left [illegible] We found that by just turning the [illegible] we could keep the [illegible] at this rate

[illegible] Bottle [illegible] We put the steel cylinder [illegible] and put the oxygen cylinder [illegible] with the gas [illegible] (1) [illegible] (2) [illegible] the glass bottle [illegible] (2) [illegible] bottle [illegible] (3) the 50 gallon N O bottle We [illegible] further [illegible] the [illegible] in place of the large [illegible] Anaesthesia was induced with pentothal The big wa[illegible] 80 per cent N O and 20 per cent oxygen and the face [illegible] stopped to the patient The oxygen continued to run at roughly the rate [illegible] was cut off After twenty twenty minutes

[illegible] is topped up with gas. A very quiet and placid [illegible] was [illegible] for [illegible] two and a half hours. For minutes [illegible] the [illegible] place the patient [illegible] his eyes and spoke. He was [illegible]

We are now making [illegible] apparatus on these lines: [illegible] right feed, ether bottle and CO_2 absorber in a neat little [illegible] square and putting the breathing bag straight on the absorber. The [illegible] is all normal gas and air. There is no need to have [illegible] for inspired and the other for expired gas with all the [illegible]

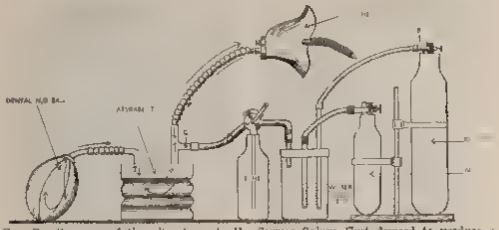


Fig. B.—Diagram of the alterations to the Service Salvus Unit devised to produce a non-Oxygen closed circuit apparatus.

In and no breathing is perfectly easy and free up and down the single tube through the absorber and into the bag. It would be well worth while to make [illegible] absorption since there is such great economy in both gas and oxygen and no heat is lost from the bolt through the expired air.

[illegible] perhaps all [illegible] should [illegible] and transport [illegible]

AN ATYPICAL CASE OF FRIEDREICH'S ATAXIA

By S. [illegible] and K. [illegible]

A WHITE [illegible] 18 [illegible] moderately [illegible]

[illegible]

Family History.—Father's [illegible] from [illegible] that his [illegible]

Personal History.—Chicken pox at the age of 2. [illegible]

illness [illegible] onal cold For the past thirteen [illegible] has been [illegible] in his feet

[illegible] — A [illegible] developed healthy looking muscular lad [illegible] well with his examiner

[illegible] — [illegible] arched bilateral pes cavus with talipes equi[illegible] [illegible] the soles of both feet below the heads of the [illegible]

FIG. 1.—Antero-posterior v[illegible]

FIG. 2.—Lateral view

Central Nervous System [illegible] Nerves.—N.A.D. Pupils equal [illegible] reacting briskly to light and [illegible] Slow dilatation. No nystagmus.

Motor System.—Nothing [illegible]

Reflexes.—Ankle jerks absent. [illegible] the right [illegible] that he never had any reflex response in his knees. A[illegible] this [illegible] patellar jerks [illegible] Babinski [illegible] absent. superficial [illegible] briskly [illegible] present. [illegible] plantar response.

Sensory System.—Pain [illegible] Loss of light touch sensation over the soles of both feet and over the skin of the toes.

[illegible] No loss of pain [illegible] There was however a well [illegible] delay in the response to the pin prick over a region of skin distal to a [illegible] left by the medial [illegible] Over this area of skin [illegible] appreciate the prick [illegible] impression that [illegible] sed him more [illegible] than elsewhere in his body.

[illegible] — No loss.

Muscle Joint Sense.—He was [illegible] to the position of his great toes [illegible] responsive [illegible] this in correct.

[illegible] — No loss.

Localization.—The [illegible] sensation of [illegible] was appreciated only over the skull the medial [illegible] the [illegible] and at the end point of the clavicle. Elsewhere it was [illegible]

Gait.—Lower limbs. The knee heel test was performed clumsily.

Upper limbs. Finger to nose test performed correctly with eyes open but

there was a definite intention tremor when vision was cut off [illegible] stance

Romberg's sign The [illegible] definitely positive

Gait Unsteady

Baragnosis and stereognosis No loss

Other systems All were found to be normal No [illegible]

No evidence of spinal delinquency

Special investigations Wassermann negative

Blood Picture —R B C 4 420 000 W B C 7 800 HB [illegible] 0·98

Differential W C count Polymorphs 42 5 per cent [illegible] 32 5 per cent large mononuclears 3 5 per cent eosinophils 1 0 per cent [illegible] cells 0 per cent R B C showed slight anisocytosis

Functional test normal

SUMMARY

The above clinical findings point clearly to the fact that the anatomical site of the lesion is in the posterior columns i e Romberg's [illegible] with eyes closed loss of vibration sense [illegible] joints [illegible] jerks

The family history suggests a familial tendency [illegible] the case is one of the hereditary ataxias

The only hereditary disease which [illegible] posterior columns is Friedreich's ataxia In this [illegible] concurrent lesion in the lateral columns [illegible] plantar reflex and incoordination of the [illegible] limb ataxia not sensory only

The fact that these are the features [illegible] possibility of Friedreich's ataxia

It is considered therefore that this is an [illegible] started early in life affecting only the posterior [illegible] fully and is now stationary

In the differential diagnosis Adie's syndrome [illegible] tion congenital tabes tabes dorsalis and [illegible] considered

I am indebted to Surgeon Captain [illegible] R N V R [illegible] Surgeon Commander Allison R N V R for [illegible] me

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A CASE OF TUBERCULOSIS OF THE NOSE

By Surgeon Lieutenant H D Brown [illegible] R N V R

While lupus of the nose is not infrequently [illegible] tuberculosis of the nasal fossæ is a comparative [illegible] may therefore be considered worthy of record

Gunner aged 45 was admitted to R N H Haslar [illegible] 1940 [illegible] planning of left sided nasal obstruction and discharge [illegible]

History —For many years he suffered from nasal [illegible] nose [illegible] frequently blocked and a muco purulent discharge [illegible] present About four months previous to admission [illegible] much more pronounced on the left side accompanied by [illegible] charge Fœtor also became marked He had served in the Mediterranean but never been to China or the Far East This last was important because

the first pathol[illegible] [illegible]mination of tissue from the nose suggested [illegible] unsuspected granuloma [illegible] possibility of leprosy had to be taken into [illegible]

An operation [illegible] had been performed [illegible] previously in [illegible] details of this were not available. In April 1940 the [illegible] X-rayed in R.N.H. Haslar [illegible] ended [illegible] At that time no gross pathological changes were [illegible] the nose. [illegible] family history of tuberculosis.

Examination.—The [illegible] of good [illegible] physique [illegible] and [illegible] X-ray examination of the chest revealed [illegible]

[illegible] the left side of the nose was found to be full of [illegible] removed by forceps and syringing. On the [illegible] a bony spur was now revealed. The mucosa covering [illegible] the bone was exposed. A small area of cartilage about [illegible] here. The mucosa surrounding these denuded areas was [illegible] granulation tissue which was dark red and indolent looking. There [illegible] appearance such as is usually seen in cases of [illegible] tissue also covered the anterior end of the left inferior [illegible] which was present both in the middle meatus and on the floor [illegible]

[illegible] of the nasopharynx [illegible] revealed no gross [illegible]

Treatment.—W[illegible] regard [illegible] X-ray pictures of the [illegible] dullness of the left antrum.

A [illegible] the granulation tissue surrounding the area of bare bone was [illegible] which subsequently on pathological examination proved to be a [illegible] which [illegible] definitely determined. The diagnosis [illegible] established [illegible] including [illegible] usually [illegible] from the maxillary [illegible] of the septum was examined. In this tissue tubercle bacilli were found.

Treatment.—After [illegible] examination was applied to the left side of the nose and all visible diseased tissue scraped away. The procedure naturally resulted in [illegible] exposed bone and cartilage and repeated daily dressings were necessary to prevent the formation of large crusts. As a result of this treatment the area of destruction was relieved and he felt much more comfortable. Examination of the throat showed the disease was not arrested.

Progress of Case.—He was seen one month later after his return from sick leave. The right side of the nose had been stuffy for about a week. On examination the right side of the anterior part of the septum was found to be swollen with a boggy feel on probing. This septal swelling was causing obstruction by coming in contact with the right inferior turbinal. On inspecting the left side it was found that the tuberculous process had extended through the cartilage from left to right, involving the mucosa on that side. There was still no evidence of pulmonary disease.

It was now obvious that a much more extensive operation including removal of [illegible] of the anterior part of the septum and the maxillary crest was required. Unfortunately owing to an error in transfer from Haslar to another hospital he had to be arranged so his further progress could not be observed.

Summary.—A case of tuberculosis of the nose is described. The rarity of the condition is emphasized. Æthology is discussed. The most likely factors are [illegible] and infection of the septal mucosa where it was thin and stretched out over the prominent bony ridge. Trauma to the anterior part of the septum is most frequently due to fingering the nose. Continual bathing of the mucosa in discharge from the old standing sinus disease would lower local resistance to infection.

A STAB WOUND OF THE FEMORAL ARTERY

By Surgeon Lieutenant R. W. Smith, M.B., R.N.V.R.

[illegible] of H.M. ships at sea on June 9, 1941, an A.B., aged 24, was [illegible] with a dagger-pointed sheath knife when he had [illegible] plunged into the upper part of his right thigh. He was alone at the [illegible] in a small forward to the [illegible] which is situated about one [illegible] on the [illegible] deck. He collapsed [illegible] half an [illegible] then [illegible] helped the rest of the [illegible] by the railings [illegible] him. He fortunately [illegible] about 1000 [illegible] the medical officer [illegible] the boy. The [illegible] pulsed [illegible] and [illegible] from the [illegible] that [illegible] the [illegible] the [illegible] the provisional [illegible] found [illegible] the [illegible] one [illegible] the [illegible] the [illegible] the [illegible] the [illegible] blood transfusion and [illegible] of the [illegible]. The [illegible] passed [illegible] down to the [illegible] the femoral shaft during the [illegible] the medial half of the [illegible] and the femoral [illegible] was immediately [illegible] of both limbs. The femoral artery (being 1½ in. apart) and the [illegible] saphenous vein [illegible] further identifying [illegible] the wound [illegible] the [illegible] 350 c.c. of blood with 100 c.c. of [illegible] restored and he rapidly regained consciousness. At the end of the operation his blood pressure was 118 [illegible] 60. A flush will be seen [illegible] the knee, though the leg and foot were cold and waxy [illegible]. Pulsation was felt in the popliteal [illegible] and in the dorsalis pedis artery.

For the next two days he was nursed with the leg and foot [illegible] cloth [illegible] and kept [illegible] and [illegible] [illegible] [illegible]

[illegible]

REFERENCES

[1] LAKE Cold Limbs and Gangrene *Brit Med Jn* [illegible]
[2] TRIBHOUNTE Surgery of Modern Warfare

A CASE OF COMPLETE OPHTHALMOPLEGIA INTERNA

By SURGEON COMMANDER L P SPERO THOMS RN

A commander Royal Navy aged 23 [illegible] to night need glasses His vision was $\frac{6}{9}$ each eye with [illegible] myopic error but certain features were at once obvious He had marked ptosis of both eyes and could not move them a fraction in any [illegible] His gaze was fixed steadily to the front There was no squint and [illegible] The cornea media and fundi were normal Both pupils were equal and reacted to light and accommodation

This therefore was a case of complete ophthalmoplegia interna [illegible] the ocular muscles being unaffected

The muscles on both sides were also weak and the tendons [illegible] of the body generally was below normal The patient was mentally [illegible] slow and lethargic He was completely colour blind No other [illegible] or symptoms were elicited and Kahn's test was negative

No relevant family history could be obtained and he had [illegible] diseases He states that he had been born with the [illegible] He [illegible] had always drooped and he had never been able to open them [illegible]

There was no evidence of myasthenia [illegible] for the condition which has appeared to be congenital [illegible]

A NOTE ON A FIRST AID BAG FOR EMERGENCY USE ABOARD

By SURGEON LIEUTENANT H DOUGLAS LAMB R N V R

THE following is a description of a simple first aid bag of my own [illegible] constructed on the lifebelt principle which may be found useful in the event of abandoning ship It consists of [illegible]

[illegible]

8½ in [illegible] and fastened by [illegible] sewn [illegible] broad webbing [illegible] adjustable buckle to the [illegible] of the breast and waist tapes to the lower end.

Nothing very novel is claimed for design of the bag but it has the following advantages. It can be worn either with or without the monkey jacket above the lifebelt without interfering with the latter and [illegible] no inconvenience to the wearer. Being [illegible] the Mark [illegible] will be [illegible] during abandon ship [illegible] the use of [illegible] haversack [illegible] [illegible] of [illegible] [illegible] with individual professors. Mr [illegible] Spencer Wells [illegible] Wilde [illegible] Hassings.

My best thanks are due to Surg [illegible] R N V R for his photographs of the bag.

APPENDICECTOMY IN A DISTRIBUTE ALSEA

By Surgeon Lieutenant T. Davies, R N R

The following is an account of an operation for [illegible] performed appendix which was performed on [illegible] H.S. [illegible]

A [illegible] aged 21 reported on the sick list on [illegible] of lower abdominal pain [illegible] which had [illegible] on some six hours previously for the [illegible] after [illegible] The pain was intermittent [illegible] the right iliac [illegible] It did not [illegible] But it [illegible] had thereafter all the previous [illegible] normal.

The previous night he had [illegible] considerable amount of alcohol [illegible] been observed to be vomiting [illegible]

On Examination.—His face [illegible] Tongue slightly furred and moist. Pulse 90. Temperature [illegible] 22.

Abdomen. Nothing [illegible] region. No guarding. But [illegible] nothing abnormal. Urine normal.

Progress.—He was [illegible] only. The pulse rate was [illegible] but felt better and the pain [illegible]

At 1000 there was slight [illegible] and slight guarding of the right [illegible]

At 1300 he had a sudden [illegible] doubled him up. Pulse rate rose to [illegible]

Marked guarding of the right [illegible] fossa. Rose [illegible] posture. Rigidity [illegible] ness on the right side of the pelvis.

At this time we were five hours steaming [illegible] considerable distance from the nearest port. [illegible] board using the ward room table.

Morphia gr. ¼ and atropine gr. [illegible] were given [illegible]

The anæsthetic used was ether with [illegible]

[illegible]

[illegible]

[illegible]

[illegible] by authors who [illegible] that the [illegible] and subsequent edition of [illegible] in skin [illegible] tropical diseases has [illegible] extra [illegible] in volume [illegible] In addition many illustrations have been [illegible] tion and nomenclature. Other [illegible] the [illegible] group the age of [illegible] in the [illegible] of leprosy &c. In addition a [illegible] been added. This new edition maintains the [illegible] recommended as a worthy and up-to-date guide [illegible] be followed with confidence by teachers [illegible]

FIRE INJURED BACK AND ITS TREATMENT By [illegible] Illustrated by John H Ellis M D First Edition 1940 Pp xvi+1[illegible] Illustrations [illegible] London Baillière Tindall & Cox Price 30s

The difficulties associated with the sternale diagnosis and management of back ache and back injuries are commonplace. No textbook standard has passed at the present time owing to the considerable divergence of opinion [illegible] dealing therein and. Notable advances however have taken place. The [illegible] purpose of this volume is to stimulate further interest [illegible] and proper care of disabilities of the back. The book consists [illegible] independently by various authors. Divergent viewpoints are [illegible] particular writers interest or the terminologies in other specialties [illegible] in the various methods available for treatment. With such little [illegible] freely expressed by acknowledged experts [illegible]

Each of the nine chapters of which the work consists [illegible] the whole will appeal as a whole to both expert and [illegible] Chapter [illegible] backache as a symptom of Visceral Disease and in disease [illegible] and pelvic [illegible] That which follows describes fully the [illegible] and is illustrated by many fine drawings depicting [illegible] tests used in diagnosis. To mention one other chapter [illegible] dealing with the conservative aspects of injuries to the back is [illegible] for the writers of this point out the manipulation of the [illegible] selected when the physician is tempted to his detriment to the proper [illegible] and treatment. Best practice includes an early and vigorous [illegible] of injuries and treatment whereas sedentary methods are [illegible] play a [illegible] at first appearance. Further [illegible] of the book [illegible] by the fine drawings and X-ray photographs and illustrations [illegible] bibliography. Altogether a fine book which is full of information and [illegible] It is published in large type on excellent paper with well [illegible] and should be found to the credit of the publishers.

DISEASES OF THE NERVOUS SYSTEM By [illegible] for Practitioners and Students By F M R Walshe *ORD* M D D Sc F R C P Physician in Charge of the Neurological Department, University College Hospital London Physician to the National Hospital for Nervous Diseases Queen Square Neurologist to the Hospital for Epileptic and Paralytic Diseases London Neurologist to the Seamen's Hospital Greenwich Fellow of University College London Second Edition 1941 Pp 395 [illegible] illustrations Edinburgh E & S Livingstone Price 1[illegible] 6d

When a senior and experienced physician presents a handbook of neurology in the form of examinations certain risks are run. If results may be thought [illegible] any kind. In this instance there can be little doubt that the compilation has met with striking success. The book is definitely intended for those who know the subject but aim to derive an idea who also has the ability to write easily. That the book has fulfilled this is demonstrated by the early appearance of its second edition. It may be argued that the subject matter has been pressed too closely and that doubts and difficulties have been avoided. There are, of course, no cross references and emphasis of not least and the student will find many things he may be with more added variations. It is accepted and delivers all that he needs. Nevertheless the book cannot fail to be popular amongst those students who regard neurology as a necessary evil rather than the fascinating aspect of medicine.

[illegible] SKIN DISEASES. By A. C. Roxburgh, M.A., M.D., B.Ch. (Cantab.), F.R.C.P. (Lond.), Physician to the Skin Department and Lecturer in Dermatology of the Skin, St. John's Hospital for Skin Diseases. Sixth Edition. September, 1941. Pp. xxxv + 436. Eight plates (four in colour) and 179 illustrations in the text. London: H. K. Lewis & Co. Ltd. Price 16s.

This textbook, well established and has been reviewed many times in these pages. It is probably the most popular work on the subject of skin diseases. The present edition is the sixth and it has been published in exactly two years. Six editions have been published in the interval. A few new diseases and the latest manifestations of old ones have been included in this edition. The chapter on nutritional diseases has been rewritten and expanded. There also those dealing with the endocrine and nervous system. The section on instructional hospital work has been emphasized. The chapter on venereal diseases has been rewritten and expanded. The section on physiotherapy has been revised. The illustrations of venereal diseases have been increased in number. The illustrations have been improved in size by twenty pages. As a whole the book is a very good one. The skin is a highly recommended textbook for students and practitioners.

[illegible] OF THE NOSE AND EAR. By I. Simson Hall, M.B., Ch.B., F.R.C.P.E., F.R.C.S.E. Second Edition. December, 1941. Pp. 416. 74 illustrations and 4 coloured plates. Edinburgh: E. & S. Livingstone. Price 15s. net.

This is a good book. It is a most excellent book, is quite up to date and contains many [illegible] illustrations. The author's intentions of providing a work for students and practitioners [illegible] fulfilled. He has given many hints in treatment recommending [illegible] the right time for conservative and the illustrations are apt and instructive. The [illegible] of the large expenditure of every an intelligent observer [illegible] of the Ear in [illegible] with which it deals is a most [illegible] will be a valuable and most essential book of reference [illegible] should possess. The coloured and black-and-white illustrations are of the highest standard and easily assimilated. Some pictures of the regions [illegible] with worthy of the great traditions of the Nose, Throat and Ear [illegible] Edinburgh Royal Infirmary and the teachers of Logan Turner and [illegible].

[illegible] SEXUAL DISEASES. By T. Feld, E.H. Claver, C. Goedvolk and J. W. H. Joegh. [illegible] 1941. Pp. 188. Plates 18, illustrations 28. Published by the South African Institute for Medical Research, Johannesburg, in conjunction with Abbey Wright & Co. Ltd., Johannesburg. Three cent stated.

In all [illegible] the problem of unemployment was in much the same [illegible] as in Africa and it was found that there were more physically [illegible] than there were jobs to fill. Very few state of physical fitness. A centralised system of [illegible] that 1,048 for improving the state of affairs and from this the [illegible] presented in groups of thirty-two minutes to twenty-three and twenty [illegible] gave them a course of physical training.

[illegible] and described in detail the extensive study of the effects of this [illegible] on the dynamics upon the physical and industrial efficiency of [illegible].

[illegible] well illustrated and beside the interesting object-matter are [illegible] illustrations and little [illegible].

[illegible] by the authors are of an unusually large number [illegible] of their own [illegible] and consequently deserving [illegible] of occupation under which the State would take [illegible] for every member [illegible] carry their [illegible]. He [illegible] that within a few months practically [illegible] between [illegible] could be signals to [illegible] such a [illegible] in the physically [illegible] undertaking [illegible] type [illegible] collected to him [illegible].

This is a book certainly to be recommended for [illegible] and especially those of the [illegible] connected with public health and in addition the health committees of all municipal bodies. In the Services physical training is of course part of [illegible] daily routine. [illegible] in particular schools in Great Britain, both State and [illegible] firms and B.B.C. morning programmes, but there is [illegible] fully arranged physical training for all young adults, male

and [illegible] [illegible] medical [illegible] the [illegible] of health in this [illegible] [illegible] of this [illegible] the economic [illegible] [illegible] this study

First Aid to the Injured. [illegible] Ambulance Hand Book. Edited by Norman Hammer M.R.C.S. [illegible] Lt. Colonel [illegible] and Lecturer St. John Ambulance Association. [illegible] Editor. Aug. 1941. Pp. 116. 113 illustrations several of which are in colour. Bristol: John Wright & Sons. 1941. Price 3s. 6d.

First published in 1931 [illegible] this the eighth edition. It has now been and still is a standard book for ambulance first aid instructors and workers. A very [illegible] three-quarters of the book has been practically rewritten. Many new illustrations have been added, which some of the colour ones have been deleted. The book is recommended for the thorough and complete manner in which the subject matter is presented and no doubt will continue to be looked upon as the standard work on First Aid.

Catechism Series. Surgery. Parts I and II. Fifth Edition. Pp. 6. Eight X-ray plates in each. Edinburgh: E. & S. Livingstone. Price 1s. 6d. each part.

The Catechism Series is obviously designed to help students preparing for the qualifying examinations. The fact that this surgical section has reached its fifth edition would appear to suggest that it has in the past served its purpose well.

The answers in Part I dealing with general surgical problems like inflammation, the treatment of wounds and burns pathology are perhaps unnecessarily rather vague and lacking in practical details likely to satisfy the searching examiner. They are enough have the quality to arrive at presenting in a remarkably small space just those facts which the anxious candidate is looking for.

Part II deals largely with bones and joint injuries and malignancies and the accepted principles of modern fracture treatment.

An innovation is the inclusion in each part of eight X-ray plates. Although they may be described as a presentable of the field of surgery rather than the text, it would have imagined that in reproducing such a small number greater care would have been exercised in selecting films of higher quality.

Actinotherapy Technique. Foreword by Sir [illegible] G. [illegible] M.D. The Sollux Publishing Co. Slough.

Published first in 1933 Actinotherapy Technique has now reached its sixth edition (1941). The text of the present issue has been thoroughly revised and much new matter has been added which has slightly increased the size of the present volume. The book contains much valuable information presented in a precise and practical manner and it can be strongly recommended to anyone interested in modern light therapy. It would be a useful addition to the books recommended in the Physiotherapy Departments of Naval Hospitals.

The Admiralty Spy. By Walter Travis. London: Hodder & Stoughton. 1941. Price 8s. 3d. net.

Here is an exciting novel dealing with fifth column activities in the United States particularly as they might affect the naval situation. Written by the author of "Murder in the Flagship" himself an ex-member of the Naval Medical Services this thriller is a good time for the hard worked medical officer whose technical training will stand him in keeping abreast of the latest treatment of burns. The most recent sulpha drug preparations may well fail to exhaust him. The novel contains impossible plots in the story usually had disastrous consequences. How many of them succeeding and how likely it would be to come off. Hitler's personal [illegible] [illegible] in the hands of the author. Nevertheless [illegible] [illegible] of such [illegible] rather of the thriller displays in [illegible] [illegible] behind it.

News of the Service

BIRTHS

[illegible] on 11 1941 at Beacot Park [illegible] to Lieutenant Peter Hayward Butt R N [illegible]

VALLIANT [illegible] 28 1941 to Maurice [illegible] Cook [illegible] of [illegible] Lieutenant [illegible] R N A S Trinidad B W I a daughter [illegible] Ma[illegible]

ROBERTSON [illegible] 1941 at the Brandsbury Nursing Home Waterloo [illegible] Mar[illegible] to Lieutenant J Robertson R N [illegible] son

OBITUARY

We [illegible] following deaths which have occurred since our last issue to [illegible] to the relatives —

SURGEON LIEUTENANT-COMMANDER ROBERT BARCOT M B Ch B R N V R was educated at the [illegible] L M [illegible] he graduated M B Ch B in 1932 He held the posts of House Surgeon [illegible] Hospital and St Mary's Maternity Hospital Manchester and Special [illegible] at Manchester Royal Infirmary He entered the R N V R [illegible] Missing presumed killed on November 19 1941

[illegible] CAPTAIN CLAUDE DENIS DELACOUR DE LAMELLIERE M R C S [illegible] R N [illegible] 1931 and entered the Royal Navy the following year [illegible] promoted to Surgeon Lieutenant-Commander in 1939 He was [illegible] H M S [illegible] and he was sunk in the operation off Crete on May 1941 and is now reported [illegible] presumed killed

---

SURGEON LIEUTENANT DESMOND HARRY FITZHUGH DUGGAN M B B Ch B A H R N V R was the only surviving son of the late Captain G G Duggan and Mrs G H Connie Wheeler He was educated at Trinity College Dublin graduating M B B Ch B A O in 1935 and practising M [illegible] in Dublin He joined the R N V R at the outbreak of war and is now reported [illegible] killed in action at sea in H M S *Ardent*

SURGEON CAPTAIN JOHN MARTIN M H C S L R C P R N was born in Inverness in 1866 He entered the Royal Navy in 1898 and was promoted to Surgeon Commander 1912 He served in many ships and also at R N H Malta and R N H Haslar He retired in January 1926 on account of the age regulation with the rank of Surgeon Captain He served as Surgeon Commander at H M Infirmary Portsmouth during the present war and was invalided in June 1940 He died on November 1941

SURGEON COMMANDER HOBERT WALLACE NESHIT F R C P I R N was born on June 30 1894 and was the son of the late Mr Alexander Neshit of Dublin Co Dublin and was educated at the University of Dublin where he qualified L M L Ch in 1918 Five years later he took the degrees of M B B Ch B A O of the University and in 1928 obtained the F R C P I He entered the Royal Navy in April 1918 and was promoted to Surgeon Lieutenant Commander in 1924 and Surgeon Commander in 1930 After serving in many ships he was appointed to Medical Specialist at Haslar hospitals of

Hankar [illegible] Chatham successively and was [illegible] kindly market [illegible] promotion to [illegible] rank. He was killed by enemy action while serving as Medical Specialist in H.M.H.S. [illegible] on September 6, 1941.

He had a distinguished Service in the Royal Navy and apart from his medical abilities his personal charm and delightful sense of humour will always be recalled by those who knew him.

Surgeon Lieutenant Arthur Charles Swifford, M.B., Ch.B., R.N.V.R., was born at Alawick in 1911 and was educated at the University of Edinburgh where he graduated M.B., Ch.B. in 1935. He held the posts of House Physician and House Surgeon at Sunderland Royal Infirmary and after joining the R.N.V.R. was posted to H.M.S. *Express*. He resided in Hong Kong and is now reported to have died as a prisoner of war and to have been buried on Pulau Ubin Island on September 26, 1940.

Surgeon Lieutenant Robert Taylor, M.B., Ch.B., R.N.V.R., was born on May 27, 1911. He was educated at the University of Glasgow where he graduated M.B., Ch.B. in 1934. He joined the R.N.V.R. in February, 1941, and was [illegible] Mission, presumed killed following the sinking of H.M.S. *Bath* on August 1, 1941.

PRISONER OF WAR

Surgeon Lieutenant Philip Christopher Slepton, R.N.V.R.

HONOURS

D.S.C.

Surgeon Lieutenant Eric A. Penn, M.R.C.S., L.R.C.P., R.N., mentioned in *D.S.O.* when H.M.S. *Ladybird* was sunk by enemy aircraft.

Temporary Surgeon Lieutenant A. G. Reid, M.B., Ch.B., R.N.V.R., mentioned in *D.S.O.* for gallant conduct during a naval attack in May, 1941. He displayed great courage in attending to casualties.

Temporary Surgeon Lieutenant Benjamin Crawshaw, L.R.C.P., L.R.C.S., R.N.V.R., for bravery and devotion to duty when H.M.S. *Crossby* was lost.

Temporary Surgeon Lieutenants R. R. Dixon, M.R.C.S., L.R.C.P., R.N.V.R. (H.M.S. *Hawkesbury*), C. J. Vaughan, M.B., B.Ch., B.A.O., R.N.V.R. (H.M.S. *Wolverhampton*), and E. J. Yates, M.B., Ch.B., R.N.V.R. (H.M.S. *Fulton*), for [illegible] operations in Mediterranean waters.

Mentioned in Despatches

Surgeon Lieutenant W. F. Fuzzi, M.R.C.S., L.R.C.P., R.N.V.R.

Surgeon Lieutenant Charles John Roberts, M.S.S.A., R.N. [illegible] when H.M.S. *Dryhound* was lost.

Surgeon Lieutenant Patrick O'Brien, M.B., B.Ch., R.N. [illegible] distinguished services in operations in Greek waters.

R.N.V.R. Officers Decorated

The King has awarded the Royal Naval Volunteer Reserve Officers Decorations to Surgeon Commanders Thomas Weir Drummond, Parolt Harry Martin, [illegible] Hall, George McCoall, and Acting Surgeon Commander Gerald Frederick Stanley [illegible].

RETIREMENTS

Surgeon Captain H. F. Briggs, M.D., Ch.B., F.H.C.S., placed on the retired list on arrival of age (April 1, November 18, 1941 (and re-appointed).

Surgeon Captain E. C. Holton, D.B.E., M.R.C.S., L.R.C.P., R.N., placed on retired list October 24, 1941 and re-appointed.

Surgeon Captain [illegible] Murray O B E L D S placed [illegible] list October 7 1941

Surgeon Captain (D) [illegible] Hare O B E L D S placed [illegible] in accord of age regulation November 10 1941

PROMOTIONS

Surgeon Commander D D Brownlie O B E M B M R C S L R C P to be Surgeon Captain June 30 1941

Surgeon Commander [illegible] Stingwell M B M R C S L R C P to be Surgeon Captain July 2 1941

Surgeon Commander (D) [illegible] Wood L D S to be Surgeon Captain (D) October 7 1941

Surgeon Commander (D) A I Dalh L D S to be Surgeon Captain (D) November 10 1941

Surgeon Lieutenant Commander W M Hart M D L M to be Surgeon Commander August 18 1941

Surgeon Lieutenant Commander [illegible] L M S S A to be Surgeon Commander September 16 1941

Surgeon Lieutenant Commander W J M Sadler M R C S L R C P to be Surgeon Commander November 30 1941

Surgeon Lieutenant Commander C N H Joyal M B Ch B to be Surgeon Commander December 2 1941

Surgeon Lieutenant H Shair M B Ch B to be Surgeon Lieutenant Commander September 23 1941

Surgeon Lieutenant N M McArthur M B to be Surgeon Lieutenant-Commander October 11 1941

Surgeon Lieutenant C J L Tymson F R C S Ed L R C P I C Mrlbourld M D Ch B M R C P Ed P G Bmgsd B M B Ch M R C S L R C P P W Rockerville L M S S A and W R C M Hamilton M B B Ch M R C S L R C P to be Surgeon Lieutenant-Commander October 16 1941

Surgeon Lieutenant R W G Lancashire D A C B M B Ch M R C S L R C P to be Surgeon Lieutenant-Commander November 1 1941

Surgeon Lieutenant E R Murphison M B Ch B to be Surgeon Lieutenant Commander December 3 1941

Surgeon Lieutenant (Emergency List) M H Fraser M B C M to be Surgeon Lieutenant-Commander September 27 1941

Surgeon Lieutenant (Emergency List) W F Varri M R C S L R C P to be Surgeon Lieutenant Commander May 23 1941

Surgeon Lieutenant (D) T R Morris L D S D N Williamson L D S and A F Ingram L D S to be Surgeon Lieutenant Commander (D) September 19 1941

TRANSFER TO PERMANENT LIST

Surgeon Lieutenants F P Ellis M B Ch B G C Denny M R C S L R C P G H L H Irving M B G L Hughes M R C S L R C P L R Nesworthy M R C S L R C P W H F McKie M B B Ch J F Mogill M R C S L R C P H M Tuttle M B Ch B W Wilson M R C S L R C P W T Ingham M R C S L R C P M F Stephen M B B Ch C D Cogle B M B R C S M M I Enright M B B Ch H T Mag M R C S L R C P I H Dufine M B Ch B and J H Mitchell M B B Ch

WARDMASTERS

Commissioned Wardmaster W H Collins placed on the retired list on premature of age regulation November 9 1941 (and re appointed

S B C P O (Pensioner) R H S Philips to be Temporary Acting Warrant Wardmaster September 10 1941

S B C P O (Pensioner) J Tribner to be Temporary Acting Warrant Wardmaster October 6 1941

S B C P O (Pensioner) A B Ivy to be Temporary Acting Warrant Wardmaster October 24 1941

S B C P O (Pensioner) D M Jones to be Temporary Acting Warrant Wardmaster October 30 1941

ROYAL NAVAL VOLUNTEER REserve

RETIREMENTS

[illegible] Lieutenant R. M. Lithgow, M.R.C.S., L.R.C.P. [illegible] Lieutenant (Acting Surgeon) [illegible]

[illegible] Lieutenant L. Miller, M.B., Ch.B. [illegible] (of Naval rank) Orkney [illegible] and temporary [illegible]

[illegible] D. Whitehead, M.B., Ch.B. [illegible] September 11, 1941 [illegible] W. L. Ellis, M.D., C.M. [illegible] 31, 1941 [illegible] Wilson, M.R.C.S., L.R.C.P. [illegible] September 10, 1941 [illegible] A. L. Y. [illegible], M.R.C.S., L.R.C.P. [illegible] temporary [illegible] 1941 [illegible] A. Lyle, M.B., B.Ch. [illegible] temporary [illegible] Lieutenant L. L. Munro [illegible] nurse [illegible]

PROMOTIONS

[illegible] E. M. B. Zeoul, B.M., M.R.C.S., L.R.C.P. [illegible] 1941 [illegible] H. R. Maitland, M.B., Ch.B., M.R.C.P., L.R.C.S. [illegible] 1941 [illegible] M.B., B.Ch., M.R.C.S., L.R.C.P. [illegible] Lieutenant [illegible] M.B., B.Ch., L.R.C.P. [illegible] Surgeon Lieutenant-Commander [illegible] No. [illegible] 1941

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

PROMOTIONS

Nursing Sister Miss K. V. Chapman to be Acting Superintendent, Sister, N.A.V. [illegible] 1941

APPOINTMENTS

Acting Superintending Sister Miss M. U. Cowlin to R.N. Sick Quarters, Chatham, North Shields

Acting Superintending Sister Miss Y. A. L. [illegible] Fisher, Suma [illegible] R.N. Hospital, Chatham

Acting Superintending Sister Miss B. D. Harvey, L.R.N. Hospital, [illegible]

Acting Superintending Sister Miss H. Moore to H.M. Hospital Ship [illegible]

Acting Superintending Sister Miss H. B. Harvey to H.M. Hospital Ship [illegible]

Nursing Sister Miss C. W. Murray to H.M. Hospital Ship [illegible]

Nursing Sister Miss I. J. Trudell to R.N. Hospital, Haslar

Nursing Sister Miss M. T. Garden, L.R.N., to Royal Naval Hospital, [illegible]

Nursing Sister Miss W. M. [illegible] to W.R.N.S., Inverness

Nursing Sister Miss H. I. Shallcross, L.R.N., Hospital, Hong Kong

Nursing Sister Miss E. A. L. Rolfe, L.R.N., Hospital, Haslar

RETIREMENTS, ETC.

Miss L. Phillips, L.R.C.P., M.R.C.S., Q.A.I.N.N.S. (Retired), to be compulsorily retired on September 15, 1941

Preparations.

SULPHAGUANIDINE

[illegible] interest in the use of Sulphaguanidine (Sulph[illegible]) [illegible] treatment of Bacillary Dysentery and is proposed [illegible] the colon and rectum [illegible] the number of [illegible] Wellcome & Co. inform us that, subject to priority [illegible] Sulphaguanidine 0·5 gm. is available to the medical [illegible]

TRIOLAN

[illegible] chiefly the essence of which is announced [illegible] is convenient [illegible] for the application of the [illegible] advocated for burns of the hands and face. The [illegible] brilliant green and collodion incorporated in [illegible] which is easily and quickly applied to the injured [illegible] in collapsible tubes of two sizes.

VOLUME XXVIII APRIL 1942 No. [illegible]

Journal of the Royal Naval Medical Service.

Articles

BRAIN ABSCESS

BY SURGEON LIEUTENANT COMMANDER MARK A. RUCCI, LXXM.A., BCH., M.R.C.P., R.N.

AND

SURGEON LIEUTENANT (R.N.V.R.) STEPHEN C. SUCCH, M.B., B.S., F.R.C.S., R.N.V.R.

BRAIN abscess is not a very uncommon condition and calls for close co-operation between physician and surgeon in regard to diagnosis and prompt and certain treatment. The sixteen cases recorded below have all been seen during the major part of their clinical course in any rate by one of the authors; all were proved to be brain abscesses and six subsequently operated. Almost all parts of the brain where abscess is likely to occur are represented. The cases are grouped according to their etiology, the first two being metastatic from tuberculosis, causes the third traumatic and the remainder by a middle ear and frontal sinus infection.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

begin [illegible] he lost [illegible] epileptiform [illegible]

He was [illegible] to the Royal Naval Hospital [illegible] Auxiliary Hospital Barnet [illegible] the severe and constant [illegible] the right [illegible] the occipital region. Electroencephalogram [illegible] To the first shock [illegible] the [illegible] extensively [illegible] followed by [illegible] Neurologist [illegible] about. This was [illegible] forward to the [illegible] plate. The tumor was [illegible] [illegible] 1940 he [illegible] well.

[illegible] Summary

[illegible] St. Mary's Hospital Islington [illegible] Mr. Archer Ryland [illegible] closed [illegible]

[illegible] September 1, 1936. [illegible] times [illegible] normal and [illegible] On Sep[illegible] opened [illegible] the lateral [illegible] into the old [illegible] tube [illegible] dressing [illegible]

[illegible] discharging from [illegible] sinus [illegible]

[illegible] Mr. [illegible] with a tension [illegible]

[illegible] — [illegible] disturbance [illegible] left side [illegible] some ten[illegible] previously [illegible] Hospital [illegible] Mr. [illegible]

[illegible]

[illegible]

May 14 [illegible] he developed [illegible] There was right sided hemiplegia [illegible] find with a pressure of 80-90 mm [illegible]

At operation at 2200 the flap [illegible] seen to be full of pus. The posterior cell [illegible] and a small extradural abscess [illegible] dura was opened and a large abscess [illegible] drained. The next day gross [illegible] remaining the same. Hemiplegia [illegible] mortem examination was refused.

Case 6.—A man aged 29. He [illegible] Nose and Ear Hospital on April 23, 1937 [illegible] sinusitis five months ago which had [illegible] sion. There was X ray evidence of [illegible] fistula. Mr. Watkyn Thomas (one of us) [illegible] sion. The anterior part of the frontal [illegible] removed and the dura found to be [illegible] underlying frontal abscess which [illegible] logical signs. The wound was closed [illegible]

May 17. He had been drowsy [illegible] localizing signs were found. The physician [illegible] Operation was carried out the same day by S. C. S. [illegible] The flaps were turned back and the dura [illegible] pected. Pus was found in the lower part of the [illegible] exploring needle. A large rubber tube [illegible] vaseline dressing applied.

The following day he felt [illegible] The improvement was lower [illegible] into the lateral ventricle developed [illegible] days after the drainage of the brain abscess [illegible] tipsy.

Case 7.—A girl aged 15 was [illegible] with an acute frontal sinusitis and [illegible] On April 23, 1937 an external right frontal sinus operation [illegible] Much pus was found and a small piece of the [illegible] frontal sinus was removed. As the patient had [illegible] papilloedema on admission the frontal lobe was explored [illegible] through the area of dura exposed but no abscess [illegible]

May 17. She was seen by [illegible] Mr. Rai [illegible] absence. The vomiting and headache [illegible] previous operation. For a week past she had had [illegible] pressure being on an average 300 mm. That morning she had [illegible] nose with a left faced hemiplegia. There was a fistula [illegible] and a healing corneal ulcer in the right eye which had [illegible] the time when the eye had been proptosed.

Operation at 1300 on May 17 by S. C. S. [illegible] from the right to the left

[illegible] at the right [illegible] exposed [illegible] revealing [illegible] the [illegible]

Temporal [illegible]

[illegible]

[illegible]

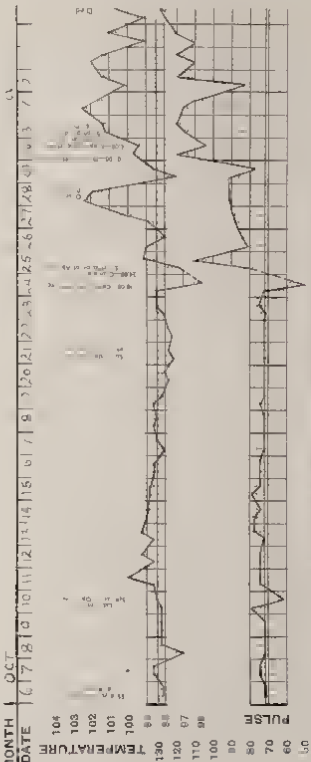
[illegible]

[illegible] had [illegible] 102.8 [illegible] as 20 [illegible] perforation [illegible] with pal[illegible] heap of the [illegible] no [illegible]

[illegible]

[illegible] walked [illegible] Bl[illegible] pressure [illegible]

[illegible]


MONTH
DATE
OCT
TEMPERATURE
104
103
102
101
100
PULSE
130
120
110
100
90
80
70
60
50

[illegible]

FIG. [illegible]

[illegible]

[illegible] the [illegible] and the posterior fossa was [illegible] exposed by [illegible] and the posterior part of the [illegible] of [illegible] tonsil. The [illegible] cavity was filled [illegible] Sulphur powder was com[illegible] the divergent squint had [illegible] The tempera[illegible] possible [illegible] was [illegible] eleven [illegible]

[illegible] flap was [illegible] The [illegible] was [illegible] shaved way up [illegible] of the right petrous [illegible] which the abscess [illegible] the temporo-sphenoidal lobe. The petrous bone was [illegible] No evidence was [illegible] of the bone [illegible] changes were [illegible] Wilson Hunt was [illegible] of the [illegible] structure [illegible] the [illegible]

[illegible]

[illegible] 149 [illegible] February [illegible] Sir C. S. was his house [illegible] for the [illegible] and left church for [illegible] of the altarch [illegible] with the slow move[illegible] from [illegible] affected side [illegible] the right [illegible]

[illegible] the nystagmus [illegible] direction and [illegible] left side [illegible] of the [illegible] of the [illegible] labyrinth. It [illegible] the [illegible] the [illegible] left [illegible] was [illegible] 84. Pulse 88. [illegible] Mr. [illegible] and [illegible] The [illegible] of Solution [illegible] markedly [illegible]

[illegible] was [illegible] and the left pupil was larger [illegible] temperature 103° F. pulse 100. [illegible] present and the day before an erysipelas [illegible]

March 15 — Up to now the patient's condition had greatly improved and the temperature had been normal for [illegible] when suddenly the temperature rose to 99.6° F. A coarse nystagmus developed this time with [illegible] movement towards the right indicating a lesion in the left cerebellum although the patient looked towards the right [illegible] tendency to change in the [illegible] labyrinthine type of nystagmus [illegible] vomiting began.

March 20 — Persistent vomiting and [illegible] were present. The [illegible] afternoon [illegible] the lateral sinus was opened [illegible] exposed and opened through [illegible] Pus was found in the lower part of the [illegible] was drained by two rubber [illegible] pressure.

For the first [illegible] April 4 she became restless and delirious [illegible] contained 14,400 cells [illegible] died on April 1[illegible]. A post-mortem was refused.

Case 14 — [illegible] Nose and Ear Hospital under [illegible] history of a discharging left ear since 1918 [illegible] temporal region for three weeks. He had [illegible] for a week and had left [illegible] having in a coma [illegible] a small white perforation of the [illegible] which there was a small [illegible] and in the left [illegible] indicating depression [illegible] lower motor neuron paresis of the [illegible] the left eye with [illegible] sixth nerve.

July 28 — [illegible] emerged up from [illegible] fossa.

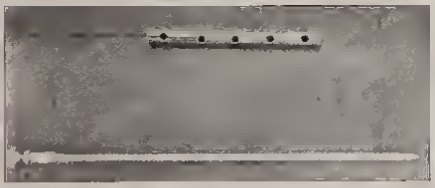
August 1 — [illegible]

August 15 — [illegible] He had not been well since [illegible] by [illegible] triangle and [illegible] sinus. The [illegible] mastoid and [illegible] reported and a 7 mm. [illegible] and plaster bandage.

[illegible] dressing [illegible] tube cased time and [illegible] then he [illegible] He died [illegible] plunder [illegible]

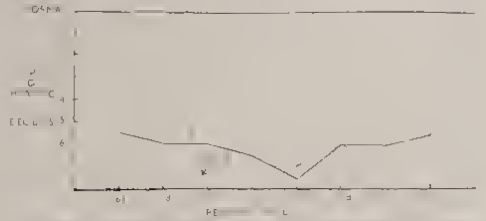
Case 15 — [illegible] 30, 1937. A left radical mastoid [illegible] previously and he was [illegible] headache occasional [illegible] normal temperature [illegible] There was a slight [illegible] to mild.

[illegible]



[illegible]

[illegible]



[illegible]

[illegible]

[illegible] in this group [illegible] medical [illegible] and inflammation [illegible]

[illegible]

Although only [illegible] cases [illegible] following [illegible] infection [illegible]

In [illegible] cases [illegible] abscesses following [illegible] infection [illegible] We have [illegible] splenectomized [illegible] by Evans [illegible] to distinguish [illegible] infection [illegible] the nasal septum [illegible] the [illegible]

The spleen [illegible] by local [illegible] result [illegible] abscess [illegible]

The [illegible] frequently [illegible] the [illegible] frequency [illegible] the case with [illegible] involved [illegible] is [illegible]

Osteomyelitis [illegible] Case 8. The [illegible] Bucy and Blundell [illegible] infection [illegible]

In our experience [illegible] all [illegible] following [illegible] burns [illegible]

[illegible]

[illegible] *Table 193* [illegible]

[illegible] through suppur[illegible]		Total of [illegible]	[illegible]
	4611	Abscess [illegible]	
[illegible]		Died	[illegible]
[illegible]	2	Recovered	[illegible]
[illegible]	Nil	Cerebellar [illegible]	
[illegible]		Died	1
[illegible]	1	Recovered	[illegible]
Total			[illegible]

[illegible] difficult in one case of squamous [illegible] and middle ear in a diabetic woman [illegible] Table [illegible] causing extensive complications [illegible] into the ventricular system.

[illegible] the aural infections chronic discussed [illegible] abscess than the [illegible] Of the [illegible] six resulted from chronic [illegible]

We [illegible] difference in the [illegible] of [illegible] suggest [illegible] higher incidence of tympanic sphenoidal [illegible] abscesses but the records [illegible] suggest [illegible] higher incidence of tympanic sphenoidal [illegible]

Infection passes into the temporal lobe through the tegmen [illegible] antrum and tympanic attic. Evans [7] found the average [illegible] tegmen to be 1.5 mm. but frequently it is much thinner. [illegible] at which aural infection most easily enters the cranial cavity. The tegmen may necrose and an extradural abscess precede the complicated involvement but frequently an adhesion between the tegmen and the dura and between the dura and the surface of the cortex is the only evidence of the route of entry. In chronic middle-ear disease a mastoid abscess cavity of which the dura forms one wall may be present long before intracranial complications set in.

There are three routes by which infection enters the cerebellum from the middle ear: (1) infection of the labyrinth and so to the posterior fossa by way of the aqueduct of the vestibule and saccus endolymphaticus, the subarcuate fossa or by necrosis of the labyrinth wall; (2) spread of infection through the petrous bone which may contain cells; and (3) the posterior fossa may be involved secondarily to a thrombosis of the lateral sinus. Case 13 is an example of spread by the labyrinthine route and Case 14 of spread from the petrous region. Cases 15 and 16 are both cases of petrositis and in our opinion this is the commonest route of spread to the cerebellum.

Prognosis and Prophylaxis

The more encapsulated an abscess becomes before giving rise to urgent symptoms the better is the prognosis. Globus and Hirsh [10] have shown how the capsule develops in brain abscesses. Unfortunately rising intracranial tension frequently demands surgical interference before this ideal state of encapsulation has been reached.

Cushing's figures [2] show a survival rate of one third when those cases

which were not derived [illegible] operation risks are included [illegible] and we do not feel that any [illegible] brain abscess cases which includes all types will show [illegible] not than thirty to forty per cent. Meyer on brain surgery [illegible] the greatest mortality without cases that [illegible] twelve cases in contrast to his excellent results in [illegible] cases and Cairns had no recoveries in ten cases of [illegible] in chronic sepsis [2]. Quite apart from the mortality [illegible] brain abscess the mortality is greatly increased by [illegible] abscesses discharge into other multiple brain abscesses. [illegible] appear very [illegible] [illegible] the main factor here appears to be the high degree of [illegible] in the lung and between treatment and [illegible] [illegible]

Of intracranial abscesses those in the frontal lobe have the highest mortality. Sicher Thomson and Negus give the mortality as 80 per cent [21]. All seven cases in the Central London Throat Nose and Ear Hospital in the period 1933 to 1937 died. Our own series shows a fairly high recovery rate but the number of cases is too small to be of significance. Of abscesses due to middle-ear infection those in the temporo-sphenoidal lobe are usually considered to have a better prognosis than the cerebellar cases but without any precise evidence to substantiate it. Our own series is too small to throw any light on this point.

Prophylaxis consists essentially in early treatment of acute sinusitis and operative treatment in all cases of chronic infection of the middle ear which do not respond to adequate conservative treatment. It is significant that no case of a brain abscess developing in a mastoid which has had a radical or modified radical operation at some previous date is known by us to have been recorded. Cases 15 and 16 in this series had most certainly got their cerebellar infection before the initial radical mastoid had been done. Birey and Hartfield [1] advocate very early external drainage in acute frontal sinusitis to avoid cerebral complications. We consider that this view is too drastic. The majority of acute frontal sinus infections subside on conservative treatment but we agree that if signs and symptoms do not improve within two or three days or if proptosis and chemosis appear external drainage should be done without further delay. It is still too early to assess the value of the sulphonamide drugs in diminishing the incidence of brain abscess but recently Watkyn Thomas [25] stated while discussing the question of intracranial complications in middle ear disease that he was not convinced that these had diminished in frequency. That their mortality had diminished he admitted and this to an extraordinary degree.

Signs and Symptoms

The taking of a careful history and a thorough general examination of the patient are all important in the diagnosis and localization of brain abscess. Symptoms may precede signs by some weeks especially in post-otitic cases where headache drowsiness and vomiting may precede signs by a month or more. At the same time an exact symptomatology may be difficult to elicit. These patients are often drowsy and poor witnesses and may be seen for the first time when they are already comatose. In Case 2 for

example [illegible] already in coma when [illegible] diagnosis [illegible] had been made [illegible] physical [illegible] than a diagnosis of [illegible]

In [illegible] signs and symptoms [illegible] these due to [illegible] localizing [illegible] terminal extension [illegible] symptoms may be [illegible] [illegible]

Differential Supplementary They [illegible] the acute process They in the [illegible] [illegible] and early abscess formation [illegible] abscesses They tend to be more localized in origin than [illegible] abscesses but they may be mistaken for [illegible] elsewhere [illegible] and symptoms include pyrexia [illegible] and blood and [illegible] changes It is realized that certain other symptoms such [illegible] mental sluggishness and wasting may in part be due to the [illegible] process but for various reasons are included under other [illegible]

The temperature is usually raised during the early stages when a diffuse [illegible] but is apt to be obscured by the original infection [illegible] It rises when encapsulated it may be normal or sub [illegible] A [illegible] temperature in a patient suspected of having a brain [illegible] suggestive Case 2 had a subnormal temperature when first [illegible] temperature chart of Case 12 is suspicious in so far as it shows [illegible] subnormal for 4 to five days prior to operation and then dropping to 96 [illegible] hours before operation is suggestive

Rigors may be reported with abscess formation in any situation but frank rigors are rare in brain abscess and their presence should be more in favour of [illegible] infection or other complications such as lateral sinus thrombosis

The blood [illegible] usually shows some secondary anaemia and a moderate polymorphonuclear leucocytosis This latter feature is more marked in the [illegible] and may be lacking in the chronic cases Against it is often reported the fact that much is due to the original infection On cases for [illegible] the lower views of about 15 000 in Case 2 it is 14 000 in Case 8 15 000 and in Case 12 14 000

The cerebro-spinal fluid changes are important in differentiating other intracranial complications such as meningitis and in assessing the degree of intracranial pressure Information can also be gathered as to whether the abscess is lying in the ventricles or subarachnoid space The fluid [illegible] if there is lung, is the abscess remains localized The pressure may be normal but is more often raised Case 5 gave a pressure of 1 50 to 1 90 mm [illegible] Cases [illegible] and 11 both gave a pressure of 1 to 800 There is usually an increase in cells except in very chronic or deep seated abscesses the [illegible] lymphocytes and are seldom more than 100 per cmm [illegible] 2 although in extremis and with relatively superficial and early [illegible] cerebral abscess had only five cells per cmm Case 11 is [illegible] in that the cerebrospinal fluid was normal containing 4 280 cells [illegible] albumin and sugar remained normal after operation

the cells [illegible] 24 and the pulse finally [illegible]. [illegible] the cerebrospinal fluid is usually somewhat [illegible] [illegible] A [illegible] [illegible] [illegible]

Drowsiness is a most useful sign. Occasionally [illegible] and some degree of [illegible] is encountered. [illegible] differentiating point [illegible] [illegible] Character change is [illegible] may precede actual [illegible] [illegible] All an process should drowsiness [illegible] extent. [illegible] in exceptionally [illegible] [illegible] is to what he [illegible] [illegible] superior. He was [illegible] change [illegible] [illegible] formerly been a great reader but now he felt [illegible] and then only light material. He was at times rather drowsy and slept in the afternoon which he never used to do before but is rather indeed paroxysmal headaches sometimes interfered with sleep this was difficult to assess. He felt at times a sense of detachment from the world. He felt alone and looking at the world as a spectator though he was well aware of what was going on. Serious brainwork and especially prolonged concentration was a great effort to him.

Vomiting is fairly frequent especially if the pressure is rising rapidly. If combined with drowsiness or headache it is a valuable confirmatory symptom. Although usually it is a result of an increase of intracranial pressure it can occur from the direct irritation of the cerebellum or the vestibular nerve.

(3) *Local Signs*.—Contiguous abscesses occur near the site of the original infection and their localization is not as a rule difficult but local signs are of extreme value in metastatic abscesses. On the whole localizing signs are more marked in chronic than in acute abscesses and there is often a long latent period before they become definite. In metastatic abscesses the original embolism may lead to transient weakness or localized convulsions weeks before other signs become obvious. This shows the need for keeping a constant check on the central nervous system in a suspected case. Œdema and hydrocephalus may lead to false localizing signs. The visual fields should be examined early. If a defect is found it is a most important localizing sign. But we have been able to examine the visual fields of Case 2 it is reasonable to suppose that a defect would have been found which would have led to an accurate localization of the abscess. Metastatic abscesses can occur anywhere in the brain and give much the same localizing signs as tumours in the same area. It is not proposed therefore to describe in detail every sign which might be produced by such an abscess but in limit remarks in the commoner sites with special reference to our series of cases. The three common sites of abscess formation are the frontal lobe the temporo-sphenoidal lobe and the cerebellum.

Frontal Lobe Abscess.—Symptoms such as headache and apathy are earlier and more in evidence than signs which are often absent altogether. Cases 6 and 8 had no abnormal signs in the central nervous system and Case 4 presented no abnormal signs though fits were present. Fits are common and may be the first definite sign of an intracranial lesion as in Case 1. These may or may not be accompanied by complete loss of consciousness and may be Jacksonian in type as in Case 5. In Case 1 fits were the first indication that anything was amiss. The patient was up and about

apparently well with an empyema wound which had practically healed when suddenly he had an attack of dyspnœa became cyanosed and went into a state of tonic spasm. Two days later he had another fit with clonic spasms and it was only after this that the other symptoms and signs appeared. A fit occurring in a patient who has nasal or aural infection or who is suffering from chronic intrathoracic suppuration is very suggestive of cerebral abscess. Fits occurred in three out of six of our cases of frontal lobe abscess but they are apt to occur in any condition producing a raised intracranial pressure and as such may have little localizing significance.

Aphasia is a fairly common symptom though mild degrees of aphasia especially difficulty in naming objects may be produced by a generalized increase of intracranial pressure and can even occur in cerebellar lesions. It is not therefore always a very reliable localizing sign. In frontal lobe disease it may be of the verbal type in which the patient names objects wrongly is slow and hesitant in his speech or has a tendency to stutter.

Some degree of hemiparesis occurred in three out of our six frontal lobe abscess due to involvement of the motor area. It usually manifests itself at first by a slight weakness of the contralateral side of the body progressing later to an actual paralysis. Unilateral anosmia and slight unilateral exophthalmos sometimes occur. We have not noted a grasp reflex in these cases.

Deviation of the eyes is worthy of mention. Case 1 developed conjugate deviation of the eyes to the opposite side to the lesion. The supranuclear fibres of the 3rd and 6th cranial nerves originate in the second frontal convolution. Excitation of this area gives rise to conjugate deviation of the eye to the opposite side.

Temporo sphenoidal Lobe Abscesses.—The localizing signs and symptoms vary somewhat with the position of the abscess. If the abscess lies far back defects in the visual field and some degree of aphasia may be expected. If far forward the uncinate gyrus may be involved with the production of uncinate fits. If high up the motor area is likely to be implicated with the production of contralateral weakness and other hemiplegic signs.

Changes in the visual fields are of great importance and may be the only localizing signs. The lower fibres of the optic radiation may be caught as they pass round the descending horn of the ventricle leading to a quadrant upper quadrantic homonymous hemianopia. This proved of value in Case 12 where rough testing of the visual fields before operation suggested a hemianopia and might have proved of great value in Case 2.

Visual hallucinations may occur. They generally appear as actual objects the figures being more formed than in the case of occipital lobe involvement. It is interesting to note that Case 3 with a right temporo parietal abscess had a visual aura before his only epileptiform convulsion.

Left temporal lobe abscess in a right handed person frequently gives rise to an aphasia. This is generally of the nominal type in which a patient finds difficulty in finding his words or names objects wrongly. The degree of aphasia varies and may not be very marked so that a prolonged test with numerous objects is necessary. More commonly a certain hesitancy is noticed in the speech. Case 12 was slow and hesitant in his speech after operation his speech having been somewhat slow for about three days before

[illegible]

The classical type of cerebellar nystagmus is coarse, with a slow component in the opposite side, as in Case 15. It is horizontal, but is rotatory. In Case 16, for instance, the nystagmus was fine and horizontal [illegible] the direction in which the patient was looking, but in the post operative period it became typical. Symonds [20] points out that the origin of the side of the lesion may be predicted by contralateral direction of the slow component. That is to say the slow component only is present and the corrective quick cerebral movement. It has unfortunately become customary to refer to nystagmus in terms of the direction of the quick component. Since this quick component is a cerebral correction it is more logical to give a more intelligible picture if the nystagmus is referred to its slow component, which is the true abnormal manifestation.

In cerebellar abscess follows labyrinthitis the picture is often confused. The full course of events is shown in Case 13. The first stage was the irritation of the affected labyrinth resulting in hyperacusis and a nystagmus in which the slow component was to the opposite side. As usual the stage was transient and gave place to complete suppression of the affected labyrinth with reversal of the direction of the nystagmus, that the slow component was now to the same side. Finally with the development of the cerebellar abscess the direction of the nystagmus was again reversed, being now its slow component towards the opposite side. The correction was still a tendency for the earlier fine labyrinthine nystagmus to reappear if the patient looked away from the side of the lesion.

Nystagmus is accompanied by vertigo, Romberg's sign and ataxia. In labyrinthitis the vertigo is in the direction of the quick component of the nystagmus, while Romberg's sign and pointing errors point towards the side of the slow component. In labyrinthitis post pointing shows a tendency towards hands in the direction of the slow component. In the nystagmus lesion in cerebellar abscess only the hand of the same side deviates and the slow nystagmus outwards [24].

Some degree of peripheral hypotonia is usual. It is [illegible] in the muscles themselves and can be demonstrated by the inability to prolong movement. This lack of muscular tone explains the cerebellar ataxia, gives rise to hypermetria or overshooting the usual distance in pointing to anything, and to dysdiadochokinesis or inability to perform rhythmic movements. This latter was present in all cases except [illegible] and in Case 16 dysdiadochokinesis and intention tremor preceded the other signs by four days.

Wackym Thomas [24] has pointed out that the labyrinthine nystagmus improves and dysdiadochokinesis and intention cerebellar lesions indicate the site of the labyrinth. Mere [illegible] cerebellar abscess, nystagmus, ataxia and Romberg's sign are to be in favour of the vertigo in labyrinthine abscess, but vertigo is predominant. In Case 13 cerebellar labyrinthitis, vertigo, although the patient was in the early stage. In Case 14 the vertigo was the most marked, the labyrinth in this case was [illegible] in Case 15 in labyrinthitis the patient was [illegible] being of cerebellar origin.

Cranial nerve lesions, coming from cerebellar abscess, are [illegible]

Case 13 [illegible] initially reacting pupil on the side of the lesion was present [illegible]

Certain [illegible] anatomical position [illegible] sudden respiratory [illegible] In Case 16 during the final [illegible] the [illegible] under pressure caused an [illegible] in respiration.

Terminal Signs.—In [illegible] oedema causes a deepening [illegible] and eventually [illegible] coma. Alternatively the [illegible] of encephalitis [illegible] suddenly burst the subarachnoid space [illegible] into the [illegible] giving rise to the [illegible] meningitis.

Special Methods of Investigation

(1) Radiography by itself is of limited use in [illegible] the terminal [illegible] In Case 3 it was of no [illegible] the [illegible] in the base of the skull and in cases where [illegible] is present it is of actual localizing value. If the pineal [illegible] the direction of the pineal shift is helpful. The [illegible] sometimes [illegible] the abscess cavity may [illegible] possible [illegible] in the surface of originally deep [illegible]

(2) *Ventriculography.*—Ventriculography is [illegible] in [illegible] where there is no focus of [illegible] localization. It is practically useful when there is [illegible] the cerebral hemisphere [illegible] [2] The ventricle on the side of the abscess is collapsed [illegible] ventricle being normal or slightly enlarged. Before ventriculography is undertaken preparation for ventriculotomy must be made. If positive result is obtained in the ventriculogram the abscess [illegible] ventriculotomy, although the consequences are the same as those which [illegible] excessive removal of cerebrospinal fluid by lumbar puncture.

In our series Case 3 only had a preliminary ventriculogram which was followed by ventriculotomy and enucleation of the abscess. Groff and Grant [11] make extensive use of ventriculography when localization cannot be made clinically and have used it in seven cases had a preliminary ventriculograph.

(3) *Electroencephalography.*—As a method of investigating intracranial lesions the electroencephalogram (E.E.G.) will probably be carried out more often. At the present time the instrument is delicate and not portable, a fact which greatly restricts its employment. Details of its uses and interpretation of results may be seen in Grey Walter's paper [23] but briefly the instrument records changes of electrical potential in the brain from electrodes being placed on the scalp and connected with a galvanometer or an ink writer. By this means it is possible to detect certain electrical rhythms in the brain. In a normal person the only discernible rhythm comprises the Alpha waves (the original Berger rhythm) which are best seen when the patient is at rest and the eyes shut. Walter showed that it is possible to elicit an abnormal slow discharge from the neighbourhood of tumours which affect the cerebral cortex either by infiltration, expansion or interruption of the cortex—the so-called Delta waves. Walter took over two hundred consecutive E.E.G. readings of patients who were found subsequently to

[illegible] cerebral tumour and in certain cases other Delta waves were [illegible] tumour is found near by This experience has been confirmed by other workers As Walter himself remarks [illegible] in a majority of cases neoplasms of the cerebral hemispheres may be [illegible] is recognised by electro-encephalographic [illegible] and with much less discomfort to the patient than is [illegible] Dr Spiegelman is responsible [illegible] With raised intracranial pressure the Delta [illegible] and of low potential Cerebellar tumours [illegible] easily localized [illegible] can be [illegible] sometimes be detected [illegible]

In abscesses of the brain the E E G [illegible] special [illegible] original sepsis may bring the patient to [illegible] logical examination is difficult [illegible] graphy helps to discriminate the [illegible] In these cases the E E G has given particularly satisfactory results The chief drawback is that the patient may be too ill to be removed to a suitable centre

One case of ours has submitted to electro encephalography and the results are most informative as it was carried out twice before and once after operation On the first occasion December 29 an abnormal focus of cortical discharge in the form of well-defined Delta waves of low potential was found indicating a comparatively benign but destructive cortical lesion in the right temporo-parietal region and extending back therefrom The second examination was carried out on February 15 the day prior to operation A marked change had occurred since the previous examination the original focus now being low in the right frontal lobe and the waves ten times as great in potential as formerly There were also small diffuse Delta discharges indicative of raised intracranial pressure The large Delta discharge is probably due to a comparatively acute oedema of the cortex The third examination was carried out on March 5 This showed the whole of frontal parietal and temporal areas to be quite free from abnormal slow discharges There were however definite signs of Delta activity in the occipital region This was thought to be due to interruption of the visual projection tracks caused either by the abscess or by the trauma involved in its removal

Treatment

For the purposes of treatment brain abscesses are conveniently divided into three groups (1) acute unlimited abscess (2) subacute localized abscess which though limited has not developed a thick walled capsule and (3) chronic or encysted abscess

Case 10 is an example of an acute unlimited abscess Cases 11 Donald [2] have stated It is impossible to drain an area of acute purulent encephalitis and it is probably unwise to disturb an abscess before it is localized The difficulty arises as it is not infrequently the case when the march of events is more rapid than the process of localization The surgeon's conscience—and it is more often the wife than the national surgeon who meets the acute abscess—forces him to act when the condition is beyond the power of surgery to control

Sulphanilamide and sulphapyridine have not yet been in use long enough to determine their ability to wall off an acute abscess into an abscess which is localized and amenable to surgery Cases 3 11 and 12 in this series

received [illegible] the drug was [illegible] in the other [illegible] was [illegible] treatment of the [illegible] had a great bearing [illegible]

Recently [illegible] sulphapyridine and [illegible] colleagues [12] using [illegible] published [illegible] which these drugs [illegible] successful results [illegible] which are drained and [illegible] Patient [illegible] dose of 2 gram. She had remained well [illegible] at the time of publication [illegible] and Rippy [8] have published [illegible] in which the signs and symptoms of brain abscess cleared up on full dose of sulphapyridine in their opinion. The difficulty is to prove that an abscess was really present. Except that it shows spontaneous recovery the clinical condition described by Stevens [20], Legrand [16], and others under the term "otogenic meningitis" has the same clinical picture as brain abscess. In this [illegible] Cushing and Dandy [2] state: "From post mortem studies there is no doubt that a cerebral abscess can subside spontaneously and another abscess can develop quickly at the same site."

In every such clinical drama the infecting organism must be identified [illegible] adequate. Unfortunately in many cases where the initial sinus [illegible] has not been opened culture of the pus has already been made. A [illegible] gram negative rod the patient is unconscious. 2 gram of [illegible] organisms is only born barely for the first twenty four hours [illegible] to develop resistance. In this connection Whitby [illegible] "As a rule [illegible] is only administered by mouth for four hourly doses and this means that the levels of drug must not be maintained. We feel that [illegible] treatment of the [illegible] will depend on the development of [illegible] therapy."

Horsley [11] suggested that Dandy's [5] method of simple trapping may [illegible] Cushing, presumably Dandy designed his method [illegible] abscess but it has not been found fatal in the hands of others. According to Dandy's description the smallest possible opening in the skull and dura is made and the needle left in situ and increases in drainage [illegible] abscess [illegible] and is [illegible]

Vincent [21] recommends drainage by a two-stage method. Firstly [illegible] the flap [illegible] stage plastic flap is turned down and the abscess opened by needle puncture through the dura under anæsthesia [illegible] the complete flap is then replaced. Three to four weeks later the flap is lifted and the drainage is [illegible]. The abscess which should now be completely [illegible] is opened by using the [illegible] and setting in the [illegible] The stage plastic flap is replaced and sutured in about [illegible] Various [illegible] techniques in some brain abscess appear so [illegible]

Dandy [illegible] that the [illegible] brain abscess is being treated [illegible] and the application [illegible] cerebellar abscess—that the [illegible] Cerebellar inspiration [illegible] One of [illegible] case of suspected cerebellar [illegible] The nurse mentioned that his inspiration

had been rather peculiar during the previous hour or two. Immediate inspection showed that he had stopped breathing completely, presumably a few moments before. It was quite easy to establish artificial respiration and to maintain it without moving the patient in the bed until he could be taken to the theatre and an intratracheal tube passed.

Subacute or localized abscesses are mostly contiguous to frontal sinusitis or mastoid infection. As the local condition has rather not been opened up only recently, and active drainage is therefore in progress, it is usually better to approach the brain abscess across the infected sinus or mastoid, thus along the natural track of infection, and to drain both abscess and sinus by the same route. However, there is no need to follow slavishly this suggestion, and each case should be treated on its merits. Gairns [2] makes this important statement. "When intracranial complications are suspected the surgical investigation should take precedence over mastoidectomy, since it will tell more about what is happening inside the skull than can be learned from looking at a small area of dura exposed in the mastoid region."

In the upon drainage of brain abscess, details will vary according to circumstances and the preferences of the operator. But the general principles are the same. These are exposure of an adequate area of dura, minimal disturbance of the brain and adhesions, drainage free of slip, pressure, and rigidity to avoid blocking, an absence of antiseptics and a minimal interference with the tube and dressings after operation.

An osteoplastic flap is usually drawn as Cross 1 and 2. This is the method of choice for the exploration of meningitis, abscesses and many cases of meningitis abscess. It gives a much wider field than a trephine opening, and the wide area of dura exposed allows insertion of the needle through the dura at more than one point. Either tube drains as Cross 2 or, if it is difficult to find the abscess through the first opening, the tube may be inserted at the point. Having located the abscess, the dura is opened by the needle and a pointing hole made through the osteoplastic flap. The dura is then strong enough to pass vertically into the brain from the surface. When exploring it is important to keep the needle in one plane so that the abscess will be missed.

Sharpe [19] has designed an instrument [illegible] syringe which is attached to the syringe barrel by a spring. Inside the needle by a collar slided to this collar is a knife. The whole instrument operates and thousands in the knife and needle. The syringe is then the knife along the surface of the needle. The needle with the syringe attached to it and the knife with its blade in the "off" position is passed and is inserted through the dura. It is then found the knife is slid forward the point of the needle by moving the knife and thus opening up the for a drainage tube. The syringe and the needle are then removed by pushing the clasp hand by which the knife is held in the hand of the syringe, thus leaving the knife in the [illegible] for further exploration.

A useful exposure in the frontal region is afforded by a trephine, the frontal sinus must not be across the incision and the opening should be at the opposite side. The bone flap extends down the temporal region on the same side and then upwards [illegible] the temporal line. [illegible]

[illegible] the frontal sinus search for a fistula in the [illegible] the whole posterior wall if necessary and [illegible] bone if a separate trephine opening is [illegible] the frontal sinus area. This incision was used in [illegible]

[illegible] abscess is to be drained in the course of a mastoid [illegible] the radical operation and remove the whole [illegible] at this point that the track of the abscess may be [illegible]

[illegible] surgical survey remarks that both Ballance and [illegible] abscesses were more easily drained through [illegible] separate trephine opening. While a radical [illegible] exposure for transmastoid drainage of [illegible] extensive Schwartze operation will give [illegible] a fissural and cerebellar abscess if the con[illegible] [illegible]

[illegible] from extension of a petrositis abscess [illegible] country to petrositis (Cases 15 and 16) [illegible] the track leads into the posterior [illegible] of posterior fossa dura which lies [illegible] and laterally the petrous bone with the [illegible] of the middle fossa above. If the bone [illegible] Trautmann's triangle—is removed [illegible] into the cerebellum is laid bare. This area is well [illegible] by Watkin [illegible] (fig. 191).

[illegible] the cerebellum gives the easiest access, the [illegible] satisfactory drainage [illegible] an easy problem. With this [illegible] a rubber-covered catheter is made to the [illegible] with the bone inside. Some mental drainage tube [illegible] This is left long, the distal end only being gradu[illegible] held in position at the proximal end of the [illegible] exploring needle. When pus is found the drainage [illegible] the abscess with the minimum dis[illegible] The tube is sutured to the skin edge by [illegible] and a gauze dressing is [illegible] with successful [illegible]

[illegible] it is important to build up [illegible] to prevent the dangers of leaking by covering [illegible] the top of the tube with gauze [illegible] dressing.

[illegible] operation has been carried out [illegible] preferable to the customary [illegible] Dorothy Russell and Falconer [17] [illegible] that pneumococci [illegible] They found that Prontosil sulphate in 0.1 [illegible] adjusted to pH 6.2 is not substantially more [illegible] This is therefore the antiseptic [illegible]

[illegible] further to leave the dressing for a week and [illegible] about forty hours in the operating theatre. [illegible] pushed out by the gradual obliteration of the cavity. [illegible] the latter if plaster bandages are used to make [illegible] only disadvantage of this is that patients sometimes complain [illegible]

The Chronic or Localized Abscess.—These [illegible] upside and give the best surgical results. More [illegible] and a minority of nasal and aural brain abscesses [illegible] the local primary infection has been dealt with [illegible] less than a thousand immediate operations [illegible] to expect for a clean cerebral operation.

An insignificant pus may drain the brain [illegible] abscess [illegible] and the abscess cavity [illegible] plan to plant [illegible] usually without drainage but [illegible] remaining in the operated cavity rather than [illegible] to bring out through an opening in the flap [illegible] point for drainage. During cauterization the bed [illegible] covered with saline pads and strips of ribbon gauze. [illegible] and the brain tissue as dissection proceeds. If the abscess [illegible] sometimes helpful to aspirate it to reduce its bulk during the [illegible]

Cairns [2] favours this procedure. Cushing [illegible] the complications of cerebral herniation, cerebral [illegible] intracranial pressure are avoided. The consistent use [illegible] drainage methods are employed in [illegible] in three out of their six recoveries. Vincent [22] [illegible] Horsley [13] although his three cases [illegible] must always be regarded as potentially dangerous [illegible] his method of marsupialization in the [illegible] walls have been anchored by sutures and the [illegible] the gyrus round the margin of the opening [illegible]. Bucy and Hinsdale [1] after removing the [illegible] electric cautery pack the space between the [illegible] gauze which is removed after two days. A [illegible] is found to have migrated as a whole to the surface and the [illegible] space shut off the abscess is then opened and drained [illegible] tubes. The disadvantage of this method is the risk [illegible] abscess is opened. Kahn [15] prefers the two stage method. The operation in total removal is then rare brain surface may be left in contact with the [illegible] and he prefers to marsupialize part of the abscess wall at the second operation. By the injection of colloidal thorium dioxide into the [illegible] he was able to illustrate the migration of a deep abscess in the [illegible] the seventeen day interval between the first and second stage operations. Vincent's pupils Durel and Thiebaut [6] record the successful removal in toto of an abscess in the right frontal lobe which weighed 110 gm. incidentally overcoming the technical difficulties arising from [illegible] in the falx and cerebriform plate.

Whatever method is used it is essential to remove the abscess capsule from the intracerebral cavity for as Cairns [2] says "the wall of the pus is [illegible] brain is a foreign body which produces gliosis and is likely to result in

[illegible] In Case 3 Mr. Wylie McKissock [illegible] the patient. In Case 12 the [illegible] but unfortunately spread [illegible] posterior fossa and killed the patient. [illegible] the disappearance of the retinal [illegible]

We [illegible] the abscess through an [illegible] the flap [illegible] operation of choice for the [illegible] cases.

[illegible]

(1) *Multiple* [illegible] secondary. In the first type the expanding [illegible] drainage it is particularly likely to occur after [illegible] abscess but may also occur in a subacute [illegible] Case [illegible] Secondary œdema comes on a day or so [illegible] appearance of symptoms. It is confined typically in [illegible] if [illegible] without any interference in twenty four [illegible]

(2) *[illegible]* [illegible] the track of entry into the abscess cavity [illegible] shut off the area by spread of the infec[illegible] Case 10 illustrates the spread of an ascend[illegible] of Rolando from an abscess of the temporo[illegible] illustrates the spread of infection into the lateral [illegible] the frontal lobe. It is worth recording here that [illegible] Case 11 [illegible] pierced the lateral ventricle accidentally when [illegible] stopping [illegible] ill-[illegible] ill effects.

(3) *Rise* [illegible] Temperature is useful. It has been characteristically in Case 11. [illegible] rises should a rise of temperature first is [illegible] three [illegible] Case [illegible] has described.

(4) *Encl[illegible]* [illegible] Likely to occur in a multilocular abscess partially or [illegible] complete. Case 16 illustrates this compli[illegible] and [illegible] pointed out in before the cerebellar abscess [illegible] complicated [illegible] the patient began to recover.

(5) *Forth[illegible]* [illegible] *non* occurs in acute abscesses whether drained [illegible] (Case 10). [illegible] occur in subacute abscesses. Case 14 showed [illegible] weeks after a brief first appeared to be [illegible] cerebellar abscess.

(6) *Multiple* [illegible] may be present. This is frequently the case in [illegible] *spread*. In Case 4 a second abscess was found [illegible] and found Elec[illegible]

(7) *[illegible] of* [illegible] kill the patient. In Case 12 the [illegible] the patient is [illegible]

(8) *[illegible] of* [illegible] rather in incomplete drainage or failure [illegible] Cohen [3] reports a case of cerebellar [illegible] and recurring three years later. Yet [illegible] still. The patient remained well [illegible] that the third drainage.

(9) *Cl[illegible]* [illegible] appears to be rare. But for Cohen [3] mention [illegible] and [illegible] years before had had [illegible] the second. He states no more has gone on the problem

[illegible] ment has increased [illegible] changed [illegible] its patents from [illegible] One of [illegible] which [illegible] [illegible] and has [illegible] [illegible]

[illegible] *speech defi*[illegible] [illegible] had by [illegible] Gunn [illegible] and he [illegible]

[illegible] Cairns [illegible] [illegible] [illegible]

[illegible] *Surg* **25**, [illegible]
[illegible] *Physiol* **60**, [illegible]
[illegible] *Psychol* **47**, [illegible]
[illegible] **27**, [illegible]
[illegible] MURRAY [illegible] **28**, [illegible]
[illegible] *Med* **27**, 1068 Oct. [illegible]
[illegible] *Med* **20** 1153 May [illegible]
[illegible] Diseases [illegible]
[illegible] **11**, [illegible]
[illegible] *Physiol* **3**, [illegible]
[illegible] *Med* **34**, [illegible]
[illegible] **34**, [illegible]

THE EFFORT SYNDROME

[illegible] DANSON MILLER [illegible]

The [illegible] last described [illegible] ago [illegible] came [illegible] of the [illegible] in [illegible] [illegible] Syndrome [illegible] Wa[illegible] [illegible] impor[illegible] [illegible] [illegible] [

[illegible] "keeping it up." [illegible] and [illegible] of the conditions. [illegible] 1919 and [illegible] the [illegible] in [illegible] the [illegible] [illegible] [illegible]

[illegible] Of [illegible] there are and indeed they [illegible] in every [illegible] of anxiety neurosis. [illegible] the difference [illegible] an anxiety state [illegible] the Effort Syndrome. My answer is that the Effort Syndrome is itself an anxiety neurosis but with something else added [illegible] effort. Again you will ask me, "How does this [illegible] to answer that question I must ask you to consider [illegible] and then the soil in which it grows.

An emotional stimulus, [illegible] some of the most powerful [illegible] which exist in the organism [illegible] if it is a prolonged stimulus [illegible] Again if [illegible] an abnormal soil it may be [illegible] stimulus.

As regards the soil, Arthur Ross [illegible] upon [illegible] that [illegible] 70 per cent. of the large series studied by him [illegible] some degree of insanity and then 50 per cent. [illegible] some degree of hysteria. 18 per cent. were psychopathic personalities, 4 per cent. were high grade mental deficiency, 31 per cent. had anxiety symptoms, [illegible] 11 per cent. were hysterics. Among the psychopathic personalities I [illegible] stresses the [illegible] emotional, the depressive and the hysteroid type. [illegible] Wood went further with his analysis, he found that 74 per cent. of his [illegible] had a family history of psychoneurosis, which is in the [illegible] 15 per cent. had such a history, and among these hysterics there is no doubt [illegible] any [illegible] He also found that the number of Effort Syndrome [illegible] the disease was just the same as that of the control [illegible] so that it is the nervous element which [illegible] whether it be hereditary, a contagion, [illegible] patient's early environment. Many of the cases [illegible] complain of nightmares, insomnia, or sleep-talking, some have [illegible] nocturnal enuresis, of adolescent albuminuria, and some of them [illegible] suffer from tics.

Typical of the sort of soil ruined by [illegible] is the "little Benjamin," the youngest spoilt child in the family [illegible] mother. After some juvenile years of exclusive affection [illegible] he must go to his preparatory school. [illegible] thoroughly alarmed by the spectacle of [illegible] in the restricted adolescent world. After his sheltered life [illegible] the prospect of being compelled to play dangerous games. [illegible] female influence, and during his adolescent [illegible] he gets up too suddenly in [illegible] whispers in his ear, his mother thought [illegible] and that he must not play games [illegible] tell stories in running the youngsters future prospects and [illegible] existence. Some children [illegible] requires more than the parent, but the [illegible] psychopathic in the boys, [illegible] get linked up with the idea of [illegible] his palpitations during [illegible] effort as indications of heart disease, which [illegible] Accordingly he curtails exercise. Repetition of the experience [illegible]

[illegible] and a nearly [illegible] which [illegible] the tragedy. Weird [illegible] is the [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [

[illegible] disappearance of [illegible] [illegible] [illegible]

[illegible]

[illegible] similar to the [illegible] and the pressure [illegible] and flushing [illegible] hyperexcitability [illegible] very hin[illegible] the thyroid [illegible] and muscularity [illegible]

[illegible] 40 and [illegible] minute [illegible] 10 seconds. [illegible] this breath [illegible] exercise [illegible]

[illegible]

so many of the vague pains experienced elsewhere in the [illegible] chondriac individuals.

The dizziness is sometimes [illegible] by standing [illegible] is the result of emotion. Hyperventilation in the [illegible] sometimes cause dizziness, and [illegible] usually present in [illegible] has a similar effect in other people, and should [illegible].

Fatigue is a constant feature. It is present even [illegible] rest, and it appears to be more pronounced in the [illegible] diseases rather than in the [illegible] psychoneurotic [illegible] extraordinary pain.

So much then for recognition of the Effort Syndrome. It may present itself in many guises. Sometimes the [illegible] is one of nausea and vomiting [illegible] very by exertion, night or long, [illegible] and [illegible] well in immediate [illegible] holding rest are much relieved [illegible].

The next thing is to exclude organic disease. [illegible] is possible for organic disease to [illegible] with the syndrome, particularly with congenital heart disease but [illegible] gross forms is unlikely to put [illegible] the diagnosis of [illegible]. The first process is the taking of a thorough [illegible] history. [illegible] per cent of organic hearts have a thoroughly [illegible] is [illegible] cases. Other informations is [illegible] physical [illegible] rhythms and on that [illegible] settle. 79 per cent of early organic [illegible] complaints in them is dyspnoea. Other [illegible] and the intermittent pain and the [illegible] case of an Effort Syndrome. In [illegible] some enlargement of the heart [illegible] murmurs. The pulse rate in early [illegible] the patient is at rest in [illegible] case, and the blood pressure [illegible] organic case is far more stable [illegible] the case of the Effort Syndrome. [illegible] to the vasovagal type and the [illegible] referred.

Diastolic murmurs are nearly all [illegible] murmurs require most careful [illegible]. Before [illegible] that a mid systolic murmur [illegible] must establish [illegible] of enlargement of the heart and [illegible] of the [illegible] towards the axilla. Very many Effort Syndrome [illegible] systolic murmurs [illegible] the [illegible] and [illegible] pulmonary area in organic [illegible] Effort [illegible] three [illegible]. Such murmurs [illegible] in association of the heart [illegible] and [illegible] murmurs of short [illegible] present. The murmur are all loudest when the patient [illegible] and [illegible] stethoscope lessens their intensity. [illegible] the patient and in the different places of [illegible] other [illegible]

[illegible]

[illegible]

[illegible]

[illegible] Cardiac [illegible] and [illegible] and that [illegible] in England

[illegible] cardiac pain is substernal [illegible] always syphilitic in origin [illegible] pure to be constricted and the entire mammary pain [illegible] Effort Syndrome

[illegible] I have already said the exercise tolerance test is of little value [illegible] although the tolerance [illegible] defective in these cases it [illegible] is in any control group. A sedentary and untrained man [illegible] because you cannot eliminate the emotional factor [illegible] the test

[illegible] the heart rate rises to a rapid and unsatisfactory [illegible] is possible usual X-rays and the electrocardiograph [illegible] keep the patient's mind rather on the chest than on the heart [illegible] illuminating the possibility of [illegible] You must make up your own mind as quickly and [illegible] possible because you will have to eradicate from the patient's mind the belief that his heart is affected and this is probably the [illegible] treatment. Do you will find him more cooperative and [illegible] I estimate the heart once more and then leave it [illegible]

[illegible] According to Hurst complete recovery takes anything from [illegible] months. Once cure is effected relapses are very rare. [illegible] fare badly and the more prominent the patient's [illegible] and personality the worse the prognosis becomes. [illegible] treatment intensifies the difficulties of cure. Older men [illegible] the terms of the Effort Syndrome are not easy to cure [illegible] days came in and doing. Wood gives 30 per cent [illegible] who go back in full duty and 28 per cent as the figure [illegible] in full duty. This emphasizes the disappointment that relapse [illegible] It is possible that the percentage of these cured might be [illegible] the results in recently affected cases from adolescent [illegible] The response to graduated exercise is the best guide [illegible] It is essential to obtain a thorough and [illegible] in order to make an accurate assessment of any given case. [illegible] more prominent and the patient presents few [illegible] the less reasonable effort tolerance and a fairly good [illegible] one may expect a good result. The younger the [illegible] only the syndrome has been acquired the better [illegible] such cure.

[illegible] Rest in bed is only required [illegible] bed is not good but [illegible] is the temperament [illegible] Smoking [illegible] a drink [illegible] of the treatment [illegible] fatigue [illegible] In the [illegible] his may be supplemented [illegible] The patient [illegible] days work [illegible] Persistent [illegible] suggestion [illegible] on may be [illegible] Occupation [illegible] and the mind [illegible]

Medical Officers should tackle the mind [illegible] the patient in the light [illegible] the means [illegible] mind and the Medical Officer [illegible] Organic [illegible] Medical Officer [illegible] he [illegible] patient [illegible] is unfamiliar [illegible] simple [illegible] patient [illegible] intelligence. The [illegible] is amazing that [illegible] Medical Officer [illegible] quite inefficiently. The high suggestibility of these patients [illegible] by the fact that by stroking the [illegible] patient [illegible] in their hyperæsthesia of the [illegible] to make explain their condition to them [illegible] which only [illegible] to get the patient [illegible] in this [illegible] getting him to [illegible] intense. In this [illegible] symptoms in the [illegible] tunnel the patient [illegible] before he presents himself [illegible]

The more deeply established [illegible] some centre for symptoms [illegible] Medical Officer [illegible] consultant [illegible] the Medical Specialist [illegible] Only if there is a genuine [illegible] organic heart [illegible] does he come within the province [illegible] Medical Specialist. It is then for the

[illegible] with the physical examination of [illegible] no one [illegible] than he does how much frequent [illegible] especially [illegible] the electrocardiograph and other [illegible] likely to [illegible] in the patient's mind that the heart [illegible]

[illegible] reasonable day's work must be [illegible] Neurosis [illegible] a pensioner neurotic is a special [illegible] to the neurosis there is added an [illegible] to the Nation

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34, 633–[illegible]
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SURGERY IN A HOSPITAL SHIP

[illegible] Lieutenant-Commander ARNOLD HINDHAUGH, F.R.C.S. Eng., R.N.V.R.

In October 1939 I was appointed as surgical specialist in the *Amarapoura* (formerly a merchant ship, 1,812 tons) which is then being recommissioned as a hospital ship. In the circumstances the duties which she would be called upon to perform were unknown to us, especially when I was asked to find little literature readily available on this subject.

After two years experience in this ship it seems worthwhile to attempt [illegible] the surgical fractures and of the typical work. Those who have served on a hospital ship will already know the difficulties, but it may be of value to a few of this minute minority of commissioned medical officers who [illegible] ships and shore hospitals. The first problem was the construction [illegible] operation room, and I was in the fortunate position of having [illegible] sufficiently enough to design and supervise the plans, and to see [illegible] of the sterilizing apparatus, the carpenters, plumbers [illegible] and [illegible] had no previous experience of operating theatre construction, but all were carefully directed and tactfully, though not always [illegible] required [illegible] operation.

The operating room. The dining saloon which [illegible] forward [illegible] the promenade deck is lined with large opaque windows and [illegible] maximum of daylight. It is [illegible] contracted lining [illegible] and [illegible] which remains [illegible] port [illegible] which have become the [illegible] forward end with a [illegible] and [illegible] there [illegible] The X-ray room is [illegible] the port [illegible] The X-ray room is 24 feet [illegible] The open main [illegible] assembly second operating theatre which is [illegible] Patients are received on admission to the ship [illegible] being [illegible] than [illegible] by means of a [illegible] It will be understood by those who have served in such a [illegible]

[illegible] 24 bedded [illegible] the X-ray Room [illegible] wheel [illegible] the [illegible]

[illegible] RMS *Olympic* [illegible] which [illegible] by [illegible] deflected by a [illegible] right [illegible]

[illegible]

[illegible] Bowl [illegible] the main [illegible] Marine [illegible] large [illegible] Warning [illegible] the [illegible] the [illegible]

Sterilization [illegible] used in the [illegible]

On [illegible] operation [illegible] chewes [illegible] with [illegible]

Stretchers [illegible] 17 x 10 x 8 in., 36 x 10 x 8 x 6 in., 24 x 9 x [illegible] in.
[illegible] 21
[illegible] 150
[illegible] 10
[illegible] 214 pairs (sizes 6, 7, and 8)

X-ray [illegible] the glass and gums are always applied [illegible] [illegible] times represent more than one essential.

X-ray [illegible] Surgeon Lieutenant-Commander [illegible] R.N.V.R. [illegible] particulars of the X-ray apparatus [illegible] the proportion mm and roentgens [illegible] and (single tube model) [illegible] V.L.D. [illegible] Lodge shock-free tube (Gribble or Andrews) [illegible] MX II (Watson & Sons) [illegible] [illegible] for fractures and other [illegible] (which [illegible] fully furnished with [illegible] Batteries needed [illegible] supply of the [illegible] as well as [illegible] The portability of the X-ray [illegible] convenient [illegible] and [illegible] transport. While [illegible] the necessity for [illegible] and [illegible] improvement [illegible] optimum [illegible] and photo. X-rays [illegible] portable [illegible]

[illegible] and Operations of Hospital Ship.—During a period of four years [illegible] with the Home Fleet there have been 938 admissions of which 2[illegible] have been general surgical [illegible] six Dental, E.N.T., skin, dental and [illegible] cases. Of the general surgical cases 1,287 in just over half the total have been due to wounds of various kinds and the following table shows the relative frequency of the commoner varieties of injury.

[illegible]	391
[illegible]	247
Blood [illegible]	129
Burns [illegible]	31
Injury of [illegible]	16[illegible]
Other [illegible]	325
	1,282

The miscellaneous cases included upon record consisted mainly of appendicitis (2[illegible]), hernia (86), haemorrhoids and abscesses. Cases commonly met with in civil life which were seen only in hospital ship practice were perforated peptic ulcers (6), strangulated hernia (2), acute intestinal obstruction (1), and empyema (1).

The total number of operations performed, including minor operations, was 1,[illegible]

[illegible] of Hospital Ship.—It might be supposed that it would be [illegible] to utilize a hospital ship. There are two good arguments against the fully equipped Hospital Ship equally for healing with any [illegible] Firstly, a hospital of this size with 108 beds requires adequate supplies [illegible] current steam boiler for heating and sterilizing

apparatus and staff accommodation all these are found [illegible] existing merchant ship. If a shore hospital with the same number of beds is to be constructed *de novo* the time required would be years [illegible] months and material and workmen would have to be imported [illegible] building. In the case of this ship conversion to a hospital ship is completed in three months. Secondly a hospital ship can accompany a [illegible] any base, however distant. In war time the most important duty of a hospital ship is to be ready to receive casualties and for this reason 200 beds are constantly kept vacant. When the number of cases in this ship reaches about 200 patients are evacuated to a shore base hospital by means of a hospital carrier ship. It thus becomes necessary to distinguish between the work done by a hospital ship and by a hospital carrier, the first is a fully equipped hospital and the second is a means of transport perhaps fitted for reasonable duties. In general Naval vessels are fitted as hospital ships and some Army vessels are equipped with the sole view of carrying cases.

Difficulties and Advantages of the Work.—The necessity for frequent evacuation of cases from the ship in order to maintain 200 vacant beds compels the possible casualties only down the stay of individual cases in the ship. A case rarely remains for six weeks and a stay of seven or eight weeks is the average. This makes it impossible to secure continuity of treatment in fractures which, as is now well recognized, is the most important factor in securing optimum results. In most cases the difficulty can be obviously met by securing a good position of the fracture and [illegible] the hospital in a plaster of Paris case. In cases the situation is more difficult, in cases of fractured femur where Kirschner wire extension may be needed for seven or eight weeks. Transport of cases with splints and wire in situ with the limb in a Thomas splint is uncomfortable for the patient and interferes with fixation so that the course now followed is extension until union is firm and then fixation to a plaster gear in which the patient can be transported.

The decision as to which class of non-urgent surgical case should be operated on in a hospital ship is a difficult one. In general it is considered that convalescence with the exception of the patient as many cases as possible should be treated in with the exception mentioned below. The reasons for operating on a urgent case:

(1) That the constant handling of operation cases by the surgical and staff prepares them for any sudden outbreak of casualties and promotes their interest. (2) The earlier an operation is undertaken the sooner is the patient returned to duty, an important consideration. Until much one must forgo the satisfaction of operating on many interesting cases when operation does not seem justifiable in a hospital ship. Such cases include: (1) All those in which chronic return to duty cannot be expected. (2) The majority of orthopaedic cases and others in which prolonged after treatment is required.

Post operative chest complications have been more frequent than in a hospital surgery to spite of all precautions, this is probably due to excessive smoking on the part of Naval ratings. Surgical work in the Royal Navy should of sufficient operative work and must be [illegible] of gunnery skill in everyday surgery and be [illegible] a [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible] and partial fistulas are essential and should be taken [illegible] or directly on the wound.

[illegible] bone or joint the track should be excised [illegible]

[illegible] formation this must be dismissed but any [illegible] usually be felt with ease in the cavity removed.

[illegible] under class (?) or (3) and there are not more than [illegible] these may be removed simply [illegible]

[illegible] present it is not possible [illegible] (?) and (1) must be remitted [illegible]

[illegible] should be left unsutured.

[illegible] the main essential of wound treatment [illegible] place for some timespites [illegible] this [illegible] is of real value. The use of [illegible] Dakin's solution is proved a useful one and [illegible] Hydrogen peroxide has been injected along drip [illegible] rather with a view to preventing the growth of anaerobes and is a rational procedure. Apart from the above timespites [illegible] A few cases of chronic bone [illegible] osteomyelitis [illegible] and [illegible] have been made [illegible] and [illegible] ships. There is [illegible] a compound depressed fracture of the skull have remained clean and the wound is a good healed scar. Relapse has been placed in [illegible] of the cases and [illegible] is [illegible] and [illegible] in [illegible] and this [illegible] excision with [illegible] application of sulphonamide though [illegible] has been expressed to such treatment and appear in the excision.

[illegible] examples [illegible] apparently [illegible] and [illegible] below. The [illegible] cases [illegible] was filled with black [illegible] looked [illegible] Such [illegible] feature of the bomb and of this [illegible] the [illegible] all in the [illegible] the [illegible] and [illegible] fourth [illegible] by [illegible] and M & B and serum therapy.

[illegible]

[illegible]

[illegible]

[illegible]

Conclusion

[illegible] interest has [illegible] and by [illegible] two cases [illegible] partial [illegible] successfully [illegible]

[illegible] and cases [illegible] deal of experience [illegible] work of less variety

It is hoped [illegible] in a hospital ship [illegible] both in fighting ship [illegible] information may prove [illegible] hospital ship [illegible]

My thanks are [illegible] all those who have worked here [illegible] co-operation freely given whenever it was required and to Surgeon Captain J H B Martin R N for permission to publish this article

IMPROVISED METHODS OF OXYGEN ADMINISTRATION

By Surgeon Lieutenant Commander F P ELLIS R N

The methods of oxygen administration under consideration are as follow —

(1) The B L B Mask } The official masks
(2) The Hildane Mask } supplied for this purpose

(3) Nasal Catheter }
(4) The Service Respirator } Improvised methods
(5) Improvised Nasal Masks }

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] preparation [illegible] emergency

METHODS [illegible]

[illegible] *Inter* — [illegible] [illegible] [illegible]

[illegible] of the inspiratory [illegible] reservoir bag or breathing device and the [illegible] cylinder when flow is [illegible] by the inlet of the device

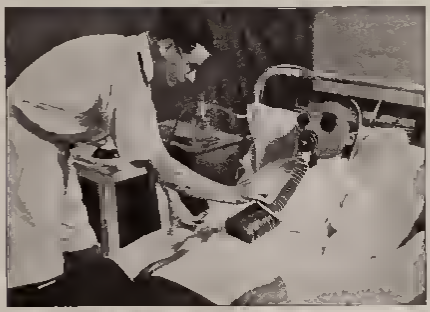
[illegible] Attached to distal [illegible] of cylinder

[illegible] normally refreshed [illegible] expiration [illegible] face piece. With a flow [illegible] concentration [illegible] oxygen can be [illegible] high [illegible] e.g. 90 to 100 per cent [illegible] can be obtained [illegible] respirator but [illegible] the [illegible] and to [illegible] old containing [illegible] and to [illegible] time of [illegible] inspiration bag and the connecting tube. With the device and an oxygen flow of 8 to 10 litres per minute [illegible] flow to give adequate pulmonary ventilation) alveolar [illegible] 90 per cent oxygen are obtained. The method is of [illegible] but [illegible] will be [illegible] method involving high oxygen concentration [illegible] include a circuit for absorbing the carbon dioxide and [illegible] and oxygen

Disadvantages (1) It is a heavy mask fitted [illegible] (2) [illegible]

[illegible] uncomfortable [illegible] oxygen flow [illegible] [illegible] [illegible]

difficulty [illegible] the resistance of the circuit which is considerable



[illegible] tube of the [illegible]

(8) *Improvised X ray mask* (Major J G Scrimgeour)—Major J G Scrimgeour of the General Hospital has described a nasal mask which is a modification of that previously designed by R V Christie

It consists of a cellulose nasal box manufactured from cleaned old X ray films The box is cut to fit the nose accurately and the sharp edge is padded with slit rubber tubing From the upper pole at the bridge of the nose the oxygen tube runs up over the forehead and through a jaconet reservoir bag which is on top of the head to the flow meter

If it is carefully made with a flow of 6 litres per minute this mask will give values for alveolar oxygen which are nearly comparable to those produced with the B L B mask (50 to 60 per cent) It is a light and comfortable mask breathing is unrestricted and the mouth is wholly accessible

To make this mask the following are required (1) A supply of old X ray plates (2) acetone for making the sealing compound (3) glass tubing of roughly 1 cm bore (broad dilution tubes with the blind end sawn off serve admirably) for the oxygen inlet (4) broad rubber tubing of ¾ to 1 cm bore

Method—(1) The X ray plates are cleaned thoroughly with hot water until quite transparent (This is essential as the sealing compound will not act if they are not cleaned thoroughly) (2) When the film is dry the two following patterns are cut out of the film

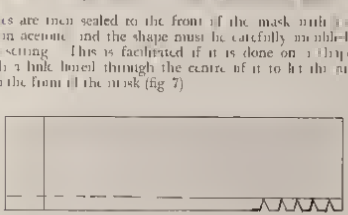
The front of the mask with two bolted wings through which the harness tapes will later run The size and shape can be varied for different facial contours

[illegible] of celluloid 8 × 2 ¾ in is cut to form the sides [illegible] 1 in for sealing and the ¼ in margin is turned [illegible] for sealing to the front of the mask

[illegible]

[illegible]

The sides are then sealed to the front of the mask with [illegible] in acetone and the shape must be carefully moulded [illegible] the [illegible] sealing This is facilitated if it is done on a [illegible] wooden [illegible] with a hole bored through the centre of it to let the air out from [illegible] the front of the mask (fig 7)



[illegible] celluloid for sealing to front of mask

[illegible] is a wooden box with a lid (fig 8)

[illegible] strip should be at the upper end so as to have a double [illegible] the perforation for the oxygen tube is made This is [illegible] the appropriate size or else by burning-out with

[illegible] glass [illegible] not [illegible] [illegible] [illegible]

The advantages of this type of mask are considerable —

(1) It is very comfortable with free access to the mouth at all times. The humidity factor is almost nil. It is the lightest by far of the masks discussed and even the weight of the rebreathing bag is taken away by resting it on top of the head and the pillow. There is no resistance whatever in the respiratory effort.

(2) There is no oxygen wastage if the mask fits well and high percentages are economically obtained.

(3) With a little practice they can be produced quickly in considerable numbers.

[illegible]

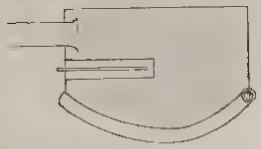
FLOW METERS

A [illegible] flow meter [illegible] a Wolff's bottle [illegible] a broad-necked bottle [illegible]. Through the cork are introduced a long inlet [illegible] of five 1 mm holes at the distal end and [illegible] outlet tube. The [illegible] of the tube need not matter; is the rate of flow corresponds to the [illegible] and size of the holes. The tube may be made of copper or any metal.

The flow meter can be calibrated with [illegible] such as the Cambridge [illegible] issued to the Army [illegible] — This is a good flow meter but the long vertical inlet tube tends to get blocked easily.)

If a reliable flow-meter is not available the flow of oxygen from a cylinder may be timed by measuring the time in seconds required to empty a litre flask or bottle held upside down in a bucket of water, the oxygen flow being introduced by means of a long rubber tube.

A [illegible] tube reaching through the cork [illegible] is a safety valve



[illegible] with rubber tubing

[illegible] Additional glass [illegible]

SETTING UP OXYGEN

With a flow of 4 litres per minute a 40 cubic foot cylinder will last [illegible] to four hours. It will usually be desirable to give about 6 litres per minute which will last two to three hours

[illegible]

[illegible] giving oxygen [illegible] and frequently [illegible] [illegible] cylinder of oxygen.

[illegible] Oxygen

[illegible] 50 per cent. [illegible] [illegible] [illegible]

(6) The considerable amount of oxygen necessary for the adequate treatment of a small number of cases which really require such measures is emphasized.

It is a pleasure to acknowledge with gratitude the advice and assistance received from Lieutenant-Colonel D. W. Bennett, M.C., R.A.M.C., Major E. G. Scantlebury, R.A.M.C., and Professor G. V. Anrep, F.R.S., and the material assistance afforded by Dr. Abdel Wahab el Shahi in connection with the analysis of the blood, CO and oxygen.

A DESCRIPTION OF THE BLOOD TRANSFUSION AND RESUSCITATION UNIT, 64TH GENERAL HOSPITAL

By Surgeon Lieutenant-Commander F. P. Ellis, R.N.

This Blood Bank was established on September 25, 1940, at the 64th General Hospital, and consisted of one part-time Medical Officer and two full-time Blood Transfusion Orderlies who were lent to the hospital by the Commanding Officer, No. 1 Base Mobile Refrigerator Unit, M.E.F. This was the establishment for the first six months.

When the campaign in Greece commenced in April, the obvious need for more trained personnel led to the employment of four part-time V.A.D.s who attended each morning.

After the evacuation of Crete, five members of the Friends' Ambulance Unit were attached, starting on June 16, three of them were employed in the Blood Bank, and two were trained in the laboratory in blood examination. These were occasionally assisting in the Blood Bank on days when large numbers of blood donors were attending. They all formed part of the emergency resuscitation scheme.

The staff now consists of one Medical Officer, one Blood Transfusion

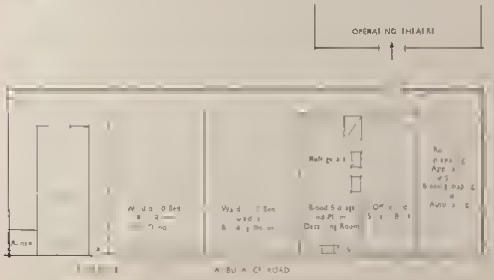


FIG. 1.—Plan of the premises used by the Blood Transfusion and Resuscitation Unit at the 64th General Hospital.

Orderly [illegible] Sick Berth Attendant [illegible] of the Friends Ambulance Unit and one patrolman V A D

The [illegible] bedded with [illegible] room and [illegible] room for donors [illegible] the preparation [illegible] of blood [illegible] and [illegible] decanting sera and [illegible] plasma a contained Office [illegible] In a blood storage tent [illegible] the Sunlite foot [illegible] blood storage cabinets which is also used for plasma decanting [illegible] store and a small annexe The premises are totally [illegible] proofed and blacked-out so that maximum lighting is available at all times

Arrangements have now been made to store frozen plasma in the cold storage rooms of No 10 Field Butchery Transport to and from this plant is carried out by a car supplied by the Friends Ambulance Unit which is also available for the distribution of blood in an emergency

Work Carried Out—The work carried out by the unit consists in drawing blood from donors to maintain a Blood and Plasma Bank for the Alexandria Area the preparation and decanting of blood plasma the preparation of glucose saline for intravenous use and the routine blood grouping of forces in the Alexandria Area who have not been grouped already

The unit also acts as a basis for the building up of a Resuscitation Unit in this hospital in the event of large scale enemy air activity over Alexandria Up to this time the wards have not been opened for resuscitation purposes as casualties have been so few

With the exception of the unit Blood Transfusion Orderlies all the attached personnel were untrained when they came to the unit They have all received lectures on Resuscitation Methods Blood Transfusion Technique and Laboratory Methods from the Blood Transfusion Officer and from Major R J Puhenaft R A M C Pathologist in the hospital

The actual figures for the work done are given in Table I which shows the amount carried out in the two six monthly periods—September 1940 to March 1941 and March 1941 to September 1941—as well as the total for the whole period

TABLE I

Period	Donors bled	Blood used (bottles)	Blood decanted (bottles)	Plasma prepared (bottles)	Plasma used (bottles)	Plasma sent out (bottles)	Glucose saline made up (litres)	Glucose saline used (litres)	Routine blood grouping
30 9 40 to 31 3 41	308	112	67	5	18	60	53	—	—
31 3 41 to 30 9 41	1 032	261	707	261	1	73	265	6	—
30 9 40 to 30 9 41	1,340	433	774	526	61	73	265	129	9 194

It will be seen that the work carried out in the last six months is roughly three times that done in the first six months Experiments in decanting plasma were started in January but it was not until extra help was obtained that this could be carried out on a larger scale

The Blood Bank—In the twelve month period 1,340 bottles of blood have been drawn from donors of the Navy Army R A F and fifty-one Italian prisoners of war after the campaign in Cyrenaica None of these donors suffered any ill-effects from giving blood and the majority returned immediately to duty

[illegible] bottles were used for blood transfusion [illegible] for storage and 34 bottles remain in stock. [illegible] of these have been damaged and indirectly [illegible] to be discarded [illegible] (especially during the experimental period) [illegible] were not fit to practical use, giving a total wastage of 151 bottles or 7 per cent.

The blood [illegible] the Emergency Medical Service and [illegible] to the Army Blood Transfusion Service. 50 cc. of 3.8 per cent [illegible] and [illegible] were used as an anticoagulant [illegible] blood in each bottle. When the bottle was filled, a clamp was put on the [illegible] tube in the bottle and then after vibrating the [illegible] the tube was run into test tube and a [illegible] for the purpose of Kahn testing and checking the blood group.

The blood was stored in a refrigerator at 38° to 42° F. Blood storage [illegible] well rather similar in pattern to a Wills ice cream cabinet. [illegible] blood in the unsatisfactory as the freezing motor which came into [illegible] half hour caused extensive haemolysis and early lysis of the red cells. The refrigerator is wholly satisfactory.

If blood is not used after five to six days the plasma was drawn off. Blood from [illegible] bottles was given with no ill effect.

Altogether [illegible] bottles of blood were given to 126 patients in this hospital. One patient received [illegible] transfusions. The largest amount of blood given in one occasion was five bottles. The largest amount given to a patient was 8,040 cc. in six months.

Throughout this period very large and [illegible] have been received at this hospital for the work of resuscitation, the routine blood and plasma transfusions carried out in a General Hospital in wartime.

The majority of the cases consisted of second operations on patients with [illegible] gunshot wounds. In septic cases the number of bottles of usefulness fresh blood was only realized.

Routine haematological examinations were carried out in all cases, the findings corresponding to those already published by the Army School of Blood Transfusion.

Reactions.—(1) No serious or unexpected injury has occurred. The patient's serum is also [illegible] restricted until the donor's cells [illegible] in patients although no cases have yet been observed in which agglutination has occurred if the groups have corresponded previously.

(2) It is difficult to assess the incidence of the febrile reaction, as many cases were pyrexial already. It appeared that if the patient was febrile his temperature usually rose [illegible] a slight fever in the majority of cases. Blood that was fresh was more inclined to cause a febrile reaction than blood that had been kept for a few days.

Rigors did not occur in the treatment of closed anæmias or acute blood loss, but they frequently occurred in the treatment with fresh blood of grossly septic compound fractures or burns. If stored blood was given to these cases they did not have rigors, but at the same time they showed little improvement, whereas the fresh blood transfusions caused striking improvement in many cases.

During one ten day period the above generalizations did not hold good reactions occurring due to faulty citrate as the inside of the rubber tubing of the still was growing moulds. Thorough cleaning of the still and replacement of the tubing stopped these reactions at once. Twenty bottles of blood and 15 litres of saline were discarded as doubtful. The routine is to make up the citrate solution with freshly distilled water, prepare the taking sets at once and autoclave them for half an hour at 20 to 25 lb pressure the same day. Autoclaving causes caramelization of the glucose but no ill effects have been observed from this. Sets not used in seven days are taken down.

(3) Jaundice. Severe jaundice occurred in three cases more than an initial transfusion and twice after repeated transfusion. The constitutional upset was slight and the jaundice cleared completely in three to five days. Slight degrees of jaundice and bile pigment discoloration of the urine occurred in a few other cases generally when several litres had been used. No case of haemoglobinuria was seen.

(4) No instance of cardiovascular failure due to overloading the circulation occurred. In transfusing closed aircanulas of blood less than had already been compensated the principles of Marriott and Kekwick were followed and the drip-counter was regulated to 40 drops per minute or less.

(5) Diarrhœa. In four cases a curious reaction was observed. Three were all similar cases—severe anæmia (red cells less than one million, haemoglobin less than 50 per cent.) associated with extensive sepsis of the mouth, standing or more in one case of burns and in three cases of compound fractures of the femur. It was observed after a few or more hours from transfusion of 1,000 to 1,200 c.c. of fresh blood that there developed an undesirable diarrhœa which became persistent if the transfusions were continued. These cases all received repeated transfusions and the diarrhœa was again noticed. The nature of the causation is obscure, but it is suggested that it might be due to early developing amyloid disease. There is little associated constitutional upset.

(6) Syphilis. Routine Kahn testing of 1,340 donors showed an incidence of 13 strongly positive and 2 weakly positive reactions (later proved negative), an incidence of just under 1 per cent. The test were then confirmed or otherwise by the Wassermann reaction.

It is found that in thirty one Indian prisoners of a certain province no positive reactions were obtained, an incidence of 7.8 per cent. and of 1,789 British other ranks on the other hand only nine were positive, 0.69 per cent.

Two megalo transfusions occurred. (a) a patient was given 11 c.c. from a donor aged drawn from a donor with a negative Kahn test who required sick seven days later with a primary chancre. The patient died six weeks later and up to that time had not developed a positive serological reaction. (b) a patient was given a fresh blood transfusion. The second bottle was chilled and the patient had a severe rigor after about ten minutes. The transfusion was stopped by the Medical Officer of the unit. It was found later that the Kahn reaction of the second bottle of blood was strongly positive. Inquiries were made as to whether the condition of the patient seemed syphilitic or tertiary, but the donor had been sent to the depot and no letters in his

R.M.O. has apparently [illegible] him. He [illegible] is still negative after [illegible]

(7) Malaria. [illegible]

Method of [illegible] [illegible] in the hospital [illegible] Oxford [illegible] (2) [illegible] (3) [illegible] [illegible] the early [illegible] the [illegible] for all types of transfusion [illegible] those on the radial side of the [illegible] fusion has run in this way for three days [illegible]

Plasma Bank

Plasma determining has been [illegible] last six months. The plasma [illegible] decanted into 326 bottles.

No Sensitizer being available [illegible] through with the greatest care. [illegible] the amount did not keep [illegible] determining, should [illegible] Sulphanilamide 1/1000 was added [illegible]

Until recently the plasma was kept in [illegible] 1 [illegible] deposit by having been kept in [illegible] Heffer. Now the plasma is not kept [illegible] the frozen state.

Method of Determining. (1) A small [illegible] few fixtures but all the refrigerator [illegible] has a tiled floor and is kept [illegible] Windows and doors remain closed and [illegible] after [illegible] inside [illegible] and a cell phone mask.

(2) The plasma is drawn from the bottle [illegible] bottle and 1/500 c.c. bottle containing either 50 or 75 c.c. of 1/1000 sulphanilamide in normal saline.

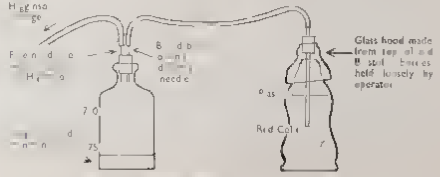


Fig. [illegible] Apparatus [illegible] decanting plasma

[illegible]

[illegible] stations are employed. On [illegible] bottles [illegible] before uncorking them [illegible] and the [illegible] plasma bottles as well [illegible] washes the [illegible] sets and blood bottle [illegible] The [illegible] the plasma one [illegible] plasma [illegible] Higginson syringe [illegible] bottle [illegible] of the plasma [illegible] cells [illegible] drawn yet.

[illegible]

Dent [illegible] is played on the necks of the bottles [illegible] the process being played off [illegible] corking. The bottles [illegible] with tape or wire, and [illegible]

Although [illegible] sodium chloride saline added, the [illegible] per cent plasma and [illegible] per cent [illegible]

The yield of plasma [illegible] 80 per cent with the present method [illegible] in the earlier period.

Method of Storage.—The plasma has been kept at room temperature in a refrigerator at 30° to 40° F. [illegible] chilly.

(1) The bulk of the plasma [illegible] has been kept at room temperature [illegible] refrigerator [illegible] chilled. After standing for a week or ten days [illegible] chilled and [illegible] in the bottom of the bottle [illegible] the top [illegible] plasma becomes [illegible] Bacterial contamination [illegible] in many days by clouding. Out of 224 bottles kept [illegible] room temperature [illegible] twenty-eight bottles were clouded [illegible] Fifty-[illegible] bottles were given to patients after being kept at room temperature for periods varying from seven days to four months without any adverse reactions. Six months is [illegible] to be a safe limit for keeping plasma at room temperature at present. The time of onset of denaturation of protein [illegible] in this way is not yet known. Probably the safety margin is much greater. The agglutinin titre of plasma kept in this way falls off rapidly in the first few weeks.

(2) In a refrigerator or the freezing compartment of a ship the colder the temperature at which the plasma is kept the more will denaturation be slowed down and at the same time the growth of many bacterial contaminants will be inhibited. Plasma can probably be kept indefinitely if frozen (five to ten years) and for two to three years in a refrigerator that does not break down. Kept in this way the agglutinin titre falls off very slowly. All plasma drawn in this bank at the present time is either kept in a refrigerator at 30° to 40° F. in 750 c.c. units or else it is frozen solidly 500 c.c. in a 750 c.c. bottle to allow for expansion, in the R.A.S.C. meat cold storage rooms where it remains. A minimum of delay between decanting and refrigeration is insisted upon.

If a refrigeration plant breaks down and it is necessary to keep the plasma at room temperature, it should be very carefully inspected before use. This was shown by 30 bottles that were kept for three and a half months at 30° to 40° F. and when brought up to room temperature were all crystal clear. After eight days however two bottles were found to be clouded with a dense growth of contaminants which had obviously hitherto been inhibited by the low temperature. Had these two bottles been kept at room temperature all the time, they would have been discarded as a result of the weekly inspection of the plasma store.

Bacteriology.—Sterility tests for the presence of aerobes and anaerobes were carried out at the time of decanting our plasma without sulphanilamide. In the early days when the aseptic precautions were not so complete it was found that the plasma of 48 out of 151 bottles of blood tested were contaminated, viz. 32 per cent. The contaminants were organisms with a predominance of *Staphylococcus albus*, *B. subtilis* and occasionally *B. perfringens* and a host of unidentified cocci and bacilli.

It is found however that bottles of plasma reported heavily contaminated and preserved at room temperature with 1/1000 sulphanilamide were reported sterile after fourteen days and were subsequently used with no ill effect. Initial sterility tests are not now being carried out.

The small amount of plasma remaining in the bottle after giving it to a patient is usually saved, diluted 1/1000 to minimize the sulphanilamide and cultured for ten days. Fifteen out of 44 bottles used were reported con

taminated viz 34 per cent the contamin[illegible] airborne organisms or moulds When it is taken into [illegible] empty bottle may not be carefully handled in the wards and that [illegible] unfortunate delay in having the sterility tests put up in the lab [illegible] these results are satisfactory

Blood agar plates put down on the decanting table [illegible] during whilst decanting was in progress showed colony counts of 50 and 70 respectively the contaminants being *B subtilis Staph albus* Gram negative bacilli and moulds N P sterile glucose broth was decanted in lieu of blood and after five days incubation it was found that one bottle out of twelve was contaminated

It has been suggested that clear plasma with a mat of debris at the bottom of the bottle might be contaminated by organisms which have fallen to the bottom It has been found here that if the plasma is translucent between the lipoid layer and the debris deposit the plasma is sterile in the vast majority of cases

It is frequently found that contamination is due to faulty sealing Seamless rubber corks of good quality should be used pushed well in and secured firmly with wire or tape A Viskap is then put on over the top and when it sets cellophane paper is tied over that While sealing the bottle Dettol is used for the hands and the blow lamp is played on the cork and the bottle neck

Clinical Use—Since March 31 1941 14 patients have received 51 bottles of plasma and altogether 20 patients have had 69 bottles The most received by any one patient was 5 740 c c The greatest amount of O plasma received by a patient at any one time was 1 560 c c in three hours without adverse reaction

As the supply of plasma was not very great until recently it was only used for burns or haemoconcentration associated with dehydration due to dysentery or typhoid The rest was kept in reserve as a plasma bank for air raid emergencies

Two out of ten cases of severe burns died only one—with haemoglobin 150 per cent—dying within two days of the plasma transfusion Plasma was given to all cases with a haemoglobin of 115 per cent or over It was found that a 750 c c bottle reduced the hæmoglobin by 12 per cent

Several cases of acute shiga dysentery were met with showing moderate hæmoconcentration (Hb 115 to 120 per cent R B C 6 to 7 million) after about five to seven days illness They showed marked improvement with an infusion of 2 000 to 4 000 c c of plasma in glucose saline 1 part in 4

Since larger supplies of plasma became available the cases requiring it have been few so their clinical experience is small

Production and Distribution—With the present staff and equipment this Blood Bank can draw blood from 60 to 80 donors twice weekly and decant the plasma on two other days This yields 20 to 40 litres of plasma weekly There is adequate cold storage for this plasma in the frozen state At the present time 72 litres in 129 bottles remain in stock 27 bottles (20 litres) have been sent to No 1 Base Mobile Refrigerator Unit three General Hospitals have received 14 4 and 8 bottles respectively (total 22 litres) and 20 bottles (15 litres) have been sent to warships Forty bottles have been

discarded [illegible] of the earlier stock were used for experimental purposes [illegible] before 69 bottles [illegible] were used clinically

It is to be emphasized that where the profit [illegible] increased the amount discarded [illegible] creased as the aseptic technique has improved. In [illegible] December 28 1940 to May 25 1941 [illegible] were discarded viz 25 5 per cent In [illegible] 30 1941, of 127 litres produced 6 litres have been [illegible] per cent Altogether approximately 172 litres have been discarded [illegible] litres discarded i e 10 per cent.

Glucose Saline—Two hundred and sixty five litres of glucose saline have been prepared and 129 litres have been given intravenously to 77 patients

Two strengths of saline are kept in stock—0 9 per cent sodium chloride with 5 per cent glucose and 0 18 per cent sodium chloride with 6 per cent glucose Sulphanilamide glucose saline—0 5 per cent in 6 per cent glucose in 0 18 per cent sodium chloride—is also kept

All the water used is freshly distilled and all saline are autoclaved and the bottles sealed the day they are made up Apart from the period previously mentioned when dirty rubber tubing on the still gave rise to pyrogens no reactions have occurred

Cases of acute dysentery and gastro-enteritis have received most of the saline infusions

In the early period of the offensive in the Western Desert last December many of the shocked and wounded cases were also dehydrated and responded remarkably to intravenous glucose saline

Routine Blood Grouping—Routine blood groupings have been carried out in 9 174 cases in local units An orderly visits the units with a rack containing up to a 150 dilution tubes with citrate solution in them obtains the samples of blood and brings them back to the hospital to group As far as it is known no mistakes in grouping have occurred but numerous errors found in groupings done elsewhere suggest that groups should always be cross checked before transfusion

I wish to acknowledge the encouragement of Colonel J M McIntosh *O B E M C* and to express my thanks for his permission to publish these notes I also wish to acknowledge the constant instruction and advice of Major G V H Buttle R A M C the Officer Commanding Army Blood Transfusion Service M E F

BORNHOLM DISEASE

By Surgeon Lieutenant Commander JAMES RONALD M D M R C P Ed R N V R

In the Scottish city wherein my peace time lot is thrown the expression It is like the devils grip doctor is encountered not infrequently in out patients descriptions of sharp pain Although the phrase is used rather loosely in Scotland it has a precise significance in other countries sometimes even in folklore tales and is almost always employed to indicate a specific thoracic pain The disease or syndrome with which it is associated

[illegible] is Bornholm disease but it has been described [illegible] as epidemic myalgia epidemic pleurodynia [illegible] disease [illegible] lents grip The condition is thus characterized by the [illegible] pain in the chest or abdomen accompanied by [illegible] and in absence of physical signs

It [illegible] prominence when a severe outbreak occurred in the Swedish [illegible] Bornholm in 1930 but epidemic and sporadic cases have been reported from all over the world (Rimpau) Swedish workers have [illegible] in the Northern Counties [illegible] and [illegible] of infection may have existed there Wilde [illegible] the disease in 1717 and in 1755 Hamilton gave [illegible] in Stirlesing where the disease [illegible] as *Kenkhest* or stubble fever Mac [illegible] Hamilton's description

The [illegible] of the disease is unknown The incubation period [illegible] for [illegible] and the period of infectivity probably the same (Pedley) The degree of [illegible] is [illegible] and when a case occurs in a family the other members of the family may escape infection Relapses are not uncommon and one attack does not confer immunity (Wenzing) The incidence is greatest among young people between 15 and 30 years of age and males are more often affected than females There is no evidence that the condition is transmitted by food water or animal vectors Complications are extremely rare but pneumonia pericarditis and orchitis are said to have been encountered

The pathology is obscure and no definite pathological lesion has yet been demonstrated Welborn was unable to find any morphological change when he examined a piece of affected muscle—fascismus dorsi—obtained by biopsy Small has described protozoan organisms within the erythrocytes but other observers have not confirmed this

The clinical picture is striking The patient is suddenly seized with acute pain in the chest or less commonly in the epigastrium When the pain is thoracic it is frequently most marked in the general line of attachment of the diaphragm to the chest wall It is usually mitigated and is aggravated by movement of the trunk in deep breathing In association with this muscular tenderness and stiffness occur the stiffness sometimes almost amounting to rigidity The affected muscles are either abdominal in those around the shoulder girdle and neck There may be tenderness at the site of pain and also in the affected muscles Pyrexia varies from 100° to 105° F and the pulse-rate is increased Respiration may become shallow but is rarely greater than 26 to 30 per minute Pleural or pulmonary signs are lacking and the white blood count is within normal limits or may even be depressed In children there is a tendency for the signs to be predominantly abdominal rather than thoracic (Rieton) The paroxysm of pain rarely lasts more than one day at the end of which time the temperature falls to normal and the patient feels fit and well though slight muscular stiffness may persist for several days

Treatment is purely symptomatic and is directed towards the relief of pain by the usual measures The exhibition of antipyretic drugs is unnecessary and the patient may be safely assured of rapid recovery

[illegible] of the utmost importance. Intra-[illegible] such as pleurisy [illegible] may be simulated or the preceding [illegible] may be [illegible] disease. The picture may strongly suggest that [illegible] (Hunter). The disease therefore possesses considerable [illegible] for both the physician and the surgeon and should always be [illegible] in the differential diagnosis of an illness of sudden onset.

The [illegible] illustrated by certain clinical reports.

[illegible] was admitted for observation. The complained [illegible] the right lower thorax. There was no history of [illegible] or heaving, or moved and there was local [illegible] the diaphragm are attachment to the chest wall. [illegible] of the neck muscles on the same side, the [illegible] temperature 102·4, pulse 92, respiration [illegible] the examination of the chest was slightly [illegible] contralateral to the [illegible] of disease were [illegible] thus should no longer [illegible] Twenty four [illegible] the [illegible] was [illegible] No relapse took place and he was discharged [illegible]

[illegible] It is rare to see a patient in nursing [illegible] for half the liquid secretion [illegible] the neck muscles on the same side. The [illegible] of intercostal [illegible] the neck muscles were [illegible] Another [illegible] of the [illegible] The [illegible] The [illegible] The [illegible] the [illegible] of the [illegible] It [illegible] on the same day for [illegible] Two [illegible] all recovered [illegible] of [illegible]

[illegible] of the people (two [illegible] [illegible] slight [illegible] [illegible] [illegible]

[illegible] muscle in contrast [illegible] which is [illegible] the parietes [illegible] (Wright [illegible]).

The [illegible] by the phrenic [illegible] intercostal nerves [illegible] supplying the central and the [illegible] peripheral part (see fig. [illegible]). [illegible] the diaphragm and the [illegible] pleura has been shown by [illegible] to give rise to referred pain in the neck, the skin area affected being that supplied by the third and fourth posterior nerve roots. The relationship [illegible] the phrenic nerve is clearly seen as the phrenic afferents mainly enter those nerve roots. At the same time motor reflex change may be exhibited by the muscles whose nerve supply is derived from these segments of the cord in the cervical plexus, the specific muscles being the prevertebral muscles including the levator scapulæ (C3 & 4), sterno-mastoid (C2 & 3) and trapezius (C3 & 4). Overflow reflex may lead to the involvement of other neighbouring muscles. Experimentally the motor effect is shown by stiffness of the muscles which may become surgical so to remain so when the subject is under surgical anæsthesia. Contractions of these muscles is readily evoked by palpation (Wright).

Afferents from the lower six intercostal nerves supply the peripheral part of the diaphragm and stimulation of these nerves gives rise to motor and

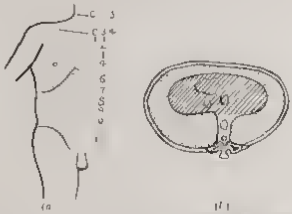


Fig. [illegible]—(a) Shows the cutaneous [illegible] supply to the trunk. (b) Represents the thoracic segment of the diaphragm [illegible] showing the segmental [illegible] supplied by the phrenic [illegible] and the segments supplied by the lower intercostal nerves.

sensory reflexes in dogs is to those previously described, though in different regions depending on the nerve or nerves involved and their distribution. The lower intercostal nerves give off lateral cutaneous, anterior cutaneous and muscular branches to the thorax and their terminal branches have a further distribution in the abdominal wall. The lateral cutaneous branches are set obliquely in the skin and fascia descending in the iliac region, the eleventh and twelfth actually cross the iliac crest. The anterior cutaneous branches supply the skin and fascia from the xiphoid process to below the umbilicus and are relatively small. In abdomen in their cutaneous distribution these nerves innervate the rectus abdominis, the internal and external obliques and the transversus muscle. Stimulation of the peripheral part of the diaphragm can thus give rise to pain in the segments of the body

[illegible]

[illegible]

[illegible]

[illegible] Pathology and [illegible] [illegible] [illegible]

[illegible] It is constant pain and he is tender. Now he feels ill [illegible] seeks medical attention. It is rarely the patient [illegible] the moment. During the second day his pain [illegible] more than a little abdominal distension. In [illegible] to get about once more the appendix is dead and [illegible] Only when it ruptures initially or perforates its diseased [illegible] does he suffer a severe pain and maybe an acute [illegible] from his medical advisers. On occasion this pain is [illegible] the distress of a ruptured abscess.

[illegible] multiplies his complaints into a medley of appendicitis, pelvic [illegible] and diffusing peritonitis, intestinal ileus and so insulting [illegible] time and again the cause of this confusion is not [illegible] pathology is irreversible.

However [illegible] is an illusion and the most earnest attention is [illegible] the divertical lumen mimic it. In [illegible] the secondary pain is more centrally placed [illegible] and more vaguely outlined than in the [illegible] the patient less aware of its shift. [illegible] emphasis of in the left iliac fossa. The progress will be [illegible] resolves and the patient is unusually [illegible] his gratitude.

III. Pelvic Appendicitis

[illegible] throughout the country. It is perfectly in order in most [illegible] and impairment and a pulse rate of 70. [illegible] proportion. The traditional chart may [illegible] emphasize the incidence of the normal. The [illegible] It is the smell of the breath [illegible] and sure signs. The sickly [illegible] but the experience of a single [illegible] popular though erroneous belief that [illegible] tendencies.

[illegible] in the early phase and so unusual in [illegible] distinguishes it from the examination [illegible] hypogastric, either thin right iliac and [illegible] left abdominal quadrant. This [illegible] rough that it happened when [illegible] of the mesosigmoid, however it is [illegible] and [illegible] void of free fluid. Superficial palpation [illegible] discomfort and rarely a maximum point of tenderness [illegible] yields perception of distension and of slight guarding. Firm palpation along the brim of the true pelvis from left to right will detect a mild point of sharp tenderness beneath the right rectus abdominis and this marks the appendix crossing the pelvic brim. Hyperæsthesia is a useful finding though an uncertain one and may be outlined in the lowest segment of the belly wall. We are taught that it vanishes when the appendix sloughs, but remember the necrotic part may be purely a part of the length and that the inflamed remainder will still have active nerve terminals

[illegible] will certainly [illegible] perforation [illegible] will [illegible] some time [illegible] patient.

Recent [illegible] confirm the [illegible] lies [illegible] pelvis on rise [illegible] may be [illegible] visceral [illegible] the higher level [illegible] signs [illegible] patient.

Once [illegible] during an [illegible] reported that [illegible] during the afterwards [illegible] him from walking. The patient [illegible] quietude—the [illegible] remission [illegible] was removed the same [illegible]

The advent of perforation [illegible] all manner of [illegible] from the patient and [illegible] on the [illegible] signs or symptoms of these entanglements [illegible] the developments of morbid [illegible] first time and to illustrate the [illegible] pelvic abscess and intestinal [illegible] and merely by slow or sudden [illegible] before operation [illegible] origin before surgical interference.

If these events are not recognized the patient may [illegible] immediate diagnosis. Where a pelvic abscess is the [illegible] visceral diagnoses seem to fall [illegible] abdominal [illegible] Of the inflammatory [illegible] cystitis, salpingitis, pyosalpinx [illegible] the abscess—are common enough diagnoses. Often [illegible] small bowel or in the small and large [illegible] usually it is a matter of [illegible] urinary obstruction. The bladder [illegible] and compressed by the abscess. After the [illegible] Finally the abscess may perforate [illegible] being a ruptured pelvic [illegible]

Morbid Anatomy.

The morbid anatomy of pelvic appendicitis [illegible] points and I wish to emphasize [illegible] appendix and I can say anything the pelvic bone. [illegible] is the inflammation [illegible] its delivery through the pelvic [illegible] and usually terminate [illegible] bladder is a long [illegible] supply. Elsewhere the appendix may have [illegible] and

it may have a minor source of blood supply in addition. [illegible] right gains an arterialar supply from the colonic with the [illegible] union in vital union with Jackson's membrane and even [illegible] it may be surrounded by the omentum. In the lower [illegible] the pelvis the omentum is too short to do its duty so gangrene is [illegible] lost the blessings of a dual blood supply granted to the gall bladder [illegible] tube are not accorded to this remarkable structure.

Its Operation

A number of writers consider the removal of an acutely inflamed pelvic appendix a difficult performance. As a rule this should not be so the surgeon may make his task laborious if he uses a muscle splitting [illegible]. There is no single port of entry which gives access to the appendix [illegible] and at all times. For a surgeon to say that he [illegible] a [illegible] incision or that he never considers any approach except [illegible] a pararectal wound is ridiculous. The incision must be placed [illegible] to the position of the organ and in relation to any mischief [illegible].

In the present instance the appendix lies deeply in the pelvis [illegible] far from the mid line so that any pus without the [illegible] the central pelvic pool. It is patent that a low pararectal or a para [illegible] are the approaches of choice. If pus is present or if a [illegible] tonus is likely or if again a faecolith is lying free only a para [illegible] will give easy access to the retrorectal pouch and this [illegible]. The time honoured complaint that this path traverses [illegible] bowel is much exaggerated. The bowel can be packed [illegible]. It is not the pus you see but the pus you do not see [illegible] peritonitis that kills the patient.

[illegible] the appendix is sought the index finger is run down its [illegible] which separates the lymph exudate from its surroundings and [illegible] the whole structure lifts up into the wound where resection [illegible]. In the [illegible] of the mesappendix presents this a retrograde [illegible] may be completed with almost equal facility. Observations from [illegible] because recurrent attacks are infrequent in this [illegible]. When free fluid is present the very horizon of the pelvis must be [illegible] on a sponge holder and if pus is found it must be [illegible] drain placed to reach the lindement. This [illegible] through a gut iron incision. It is difficult [illegible] exposure and in my case the drain must leave [illegible]. I have seen a death from erosion of the deep [illegible] tube placed laterally and it is warning enough. When [illegible] peritonitis one is treating a disease far more exten[illegible] placed inflammation and drainage of this cavity [illegible] incision.

[illegible] should be replaced first so that it does not overlie [illegible]. The omentum is sufficiently pendulous it should be placed [illegible] and a drainage tube if one is needed. A garage [illegible] the inner tube of a bicycle tyre with more care than [illegible] handle the belly contents.

[illegible] many advantages over [illegible] and [illegible] It comes away in [illegible] being no [illegible] and this is functional [illegible] A [illegible] drainage [illegible] only and is [illegible] second [illegible] third [illegible] allowing the peritoneal exudate to [illegible] reforming [illegible] with its intestines [illegible] Time [illegible] just by this [illegible] though I believe there is good reason to consider peritonitis. Once [illegible] the normal duodenal [illegible] and [illegible] is unnecessary [illegible] is superfluous [illegible] the same organism.

Post operative.

Complications are [illegible] (in the matter of [illegible]) but I wish to remark [illegible] the considerations of my patients.

(1) Wound [illegible] [illegible] may manifest itself [illegible] in this fashion [illegible] the immediate [illegible] seals the tissues but [illegible] and lights [illegible] pull the [illegible] and [illegible] will [illegible] and OO the omental [illegible] [illegible] [illegible] is instead. [illegible] drain it this [illegible] the laparotomy wound [illegible] otherwise the [illegible] fluids will escape [illegible] the muscle-planes held open in this [illegible] A [illegible] laparotomy wound is a good [illegible]

(2) [illegible] The symptoms are [illegible] and [illegible] the organ and is the [illegible] complete the retention of flatus [illegible] the [illegible] is [illegible] while he waits for the [illegible] sluggish secretion of mucus [illegible] [illegible] and [illegible] high [illegible] of expressive mucus [illegible] stimulus [illegible] successful in bringing relief in a few hours [illegible] by laparotomy. Liberation of the bowel [illegible] and [illegible]

(3) This [illegible] common [illegible] [illegible] is perhaps less frequently [illegible] is simple. A [illegible] increasing complication [illegible] [illegible] is [illegible] recalling [illegible] Times [illegible] the thrombosis is [illegible] of his patient [illegible] manifest has come [illegible]

Will [illegible] see them in war and so [illegible] is equal in [illegible] than the body cavities [illegible] as [illegible] internal [illegible] is in question. A laparotomy is [illegible] for my patient and [illegible] who finds it easier in use his hands than his brains should not be [illegible] in operating theatre. The use of diagnostic surgery should lessen as the surgeon gains in experience.

These [illegible] a dangerous disease are dogmatic when [illegible] has too often led [illegible] death however the prognosis is necessary [illegible] found to be in my case instructive How often in these Inter-Varsity approach our patients guided with so much knowledge and [illegible] wisdom and so lamentably fail to take that detached view of the [illegible] and his pathology which enables the physician to view the patient [illegible] as a sequence beholding the beginning from the end We should [illegible] to this attainment so that we may not release the articles of our profession refining from knowledge and experience wisdom sympathy and [illegible] judgment [illegible] ful old experience do attain to something like prophetic strain

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EPIDERMOPHYTON INFECTIONS OF THE SKIN

By Surgeon Lieutenant IAN B SNEDDON MB ChB RNVR

The two manifestations of epidermophyton infection most commonly occurring namely *Tinea cruris* (Dhobie Itch) and tinea of the toes (Athlete's Foot or Chinese Rot) must be seen frequently by every Naval Medical Officer in a sea going ship

In ships serving in the tropics and subtropics the percentage of ratings infected particularly of the Engine Room Branch and the severity of their [illegible] is only present a serious problem During wartime when opportunity for referring cases in hospital are few and far between and when more ships are doing service in the tropics the early diagnosis and successful treatment of epidermophyton infections becomes most important It is therefore thought that a short resume of the clinical features diagnosis prophylaxis and treatment of these common but crippling conditions will be of [illegible]

Epidermophytosis of the Feet and Toes—This condition is caused by two Epidermophytes the *Epidermophyton interdigitale* and *Epidermophyton inguinale* Clinically and microscopically these two fungi are indistinct

The infection is spread from one person to another by bath mats and linoleum floors and infected towels Once the individual is infected he is continually reinfected from his own socks shoes and towels D Berberian [illegible] has demonstrated that luxuriant growths of the fungus can be obtained on unwashed socks and from those which have been laundered in the usual way Similar results have been obtained from the lining materials of shoes including cotton linen and leather

The lesions produced on and around the toes are of three main types of which the first is by far the commonest and probably is present to some extent on the feet of at least 80 per cent of ratings serving in the tropics

Type 1 Sodden white skin in the interdigital clefts which when rubbed [illegible] bright red raw area Cracks may develop both between and beneath the toes and these may become secondarily infected The lesion most between the fourth and fifth toes and is frequently overlooked [illegible] thought to be the normal condition

Type 2 A dry scaly lesion with a red raised margin The scales are

[illegible]

[illegible] the sole and on the plantar aspect of the toes. This is [illegible] of the hands is pompholyx or dyshidrosis. The condition is in the majority of cases bilateral and may be associated with a similar eruption on the hands. The vesicles may coalesce to form bulla. They contain a clear glassy fluid. The vesicle may dry up leaving a scab, or may become secondarily infected in which case pustules and superficial lymphadenitis follow, and the pustular condition of the feet gives it a peculiarly ill-kept appearance.

The second and third types may occur independently of the first and it has been found that the resultant eruption commonly occurs on the dorsum of the upper and lower limbs.

The subjective symptoms of these lesions are very slight and the patient is the first type may be seen in many other conditions, particularly exposure to the air, however in other cases this condition is found in the healthy, but it is the rule. The cracks become extremely painful and are frequently the dividing lines in sinking medical advice. Type 2 and 3 are very rare to see certainly in Indian living conditions.

Complications. (1) As has already been mentioned secondary infection with pyogenic organisms may occur in any of the cases, however it is most likely to occur in Type 1 lesions with deep cracks and in the vesicular Type 3 eruption.

(2) Involvement of other parts of the body.—(a) The hands and fingers frequently show small intraepidermal vesicles during the course of infection of the toes. Every case of dry scaly dermatitis of the hands for which no cause can be found should have the feet and toes searched for a fungus lesion. (b) *Tinea cruris* which will be dealt with more fully later is frequently associated with and secondary to epidermophytosis of the toes. (c) *Tinea unguium*. Fungus infection of the toenails is a rare but very chronic complication of epidermophytosis of the toes. The infection may spread from the free margin of the nail or from the lateral borders. In both cases it reaches the nail bed causing deformity of the nail which becomes rough, opaque and friable.

Diagnosis.—The common Type 1 lesion is unlikely to be confused with any condition except a wart which is often found in the fourth interdigital space.

Type 2 lesions have to be distinguished from true eczema, psoriasis, psoriasis, syphilide or impetigo herpetiformis.

Type 3 lesions have to be distinguished from other causes of dyshidrosis. However it may be taken as a guide that in the tropics any vesicular eruption of the feet is a fungus infection unless proved otherwise. The only

[illegible] diagnosis [illegible] from all the fungus [illegible] [illegible] These [illegible] pressure [illegible] [illegible] The [illegible] cell with other [illegible] [illegible] be required [illegible] [illegible] the [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible] folliculitis [illegible]

D[illegible] [illegible] appearance [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

According to Roxburgh [illegible] is characterized by [illegible] associated with a deep-seated [illegible] and [illegible] upheld by the cases seen. The [illegible] [illegible] and [illegible] the [illegible] and the [illegible] [illegible] [illegible]

Conversely [illegible] [illegible] and epilepsy. When consciousness [illegible] [illegible] [illegible]

(3) Details of treatment which have proved successful in practice have been given

(4) Three cases of epidermophytides have been described and discussed

Exigencies of the service have not permitted a more adequate examination of the literature on the subject It is hoped that any defects may be excused on these grounds

I wish to thank Surgeon Lieutenant Commander T H Pierce M D D P H R N V R for permission to quote the above cases and for encouragement and advice in compiling these notes and L S B A Keating for his aid in preparing the manuscript

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PSYCHIATRY UNDER BARRACKS CONDITIONS

By [illegible] LIEUTENANT GERALD GARMANY B Sc, M B Ch B R N V R

The purpose of this communication is to indicate the type of psychiatric material which is encountered in Barracks and the possible lines of approach [illegible] A large proportion of such in cases of psychiatric interest—psychopaths [illegible] unaffected in the relatively genial atmosphere of the training [illegible] and soon after their introduction to the stern environment [illegible] Barracks and men who have developed the more benign type of illness [illegible] have been returned to their depot for disposal Upon the institution of the new psychiatric department it was arranged that all [illegible] in the general attending lists should be transferred [illegible] were referred to the Naval psychiatrist at the first complaint [illegible] that these cases are easier to deal with at an early stage before [illegible] suspicionism or hysterical prolongations have developed

In the first place it should be realized that these patients must be interrogated [illegible] There is a certain type of hysterical psychopath who would gladly [illegible] his entire symptomatology and life history in the centre of Hyde Park but the vast majority have a great sense of shame and an injured self respect and will not readily expose their emotions to view Secondly the interrogation must be unhesitated and sympathetic one However unpleasant a specimen the patient may appear in his offensively determined behaviour on the part of the examiner is ineffectual and a waste of time Thirdly the first examination of these patients requires a fair allotment of time possibly three-quarters of an hour in an inhibited or defective patient

The assessment of the patient's function is usually straightforward and patent either on inspection or in the first few minutes in the case of the more common anxiety and depressive reactions Schizophrenic or paranoid tendencies may not show themselves as easily But the essential feature of the examination must be an attempt to assess the soil in which these seeds

are growing—the underlying personality. It is [illegible] that alone permits a prognostic estimate and will determine [illegible] is liable to effect a recovery or indeed if [illegible] the patient at all. For example, a chief stoker [illegible] all the [illegible] present at several actions and a survivor from [illegible] He was a man of good personality, excellent psychiatric [illegible] and had a clear family history. Following [illegible] great responsibility he developed a moderately severe anxiety [illegible] tiredness, loss of confidence in himself, depression and [illegible] In contrast may be cited the case of a morally backward [illegible] the history of psychopathic inadequacy, nomadic habits [illegible] family background, who broke down under very little stress. [illegible] extremities had an anxiety state yet the cases are vastly different. The [illegible] in the first case was universally good. Pity and [illegible] the second is merely to be [illegible]

The function of the Barracks psychiatrist may be summarized [illegible] Firstly, to investigate and treat patients complaining. [illegible] A very considerable amount of mental illness occurring [illegible] be admitted to hospital. The expense and waste [illegible] treating neurotic patients needlessly is considerable, but [illegible] the prevention of men becoming hospital cases, and [illegible] effect this can have upon the lay mind. Secondly, [illegible] hospital psychiatrists and undertake the after-care and [illegible] discharged patients placed in category C (unfitted for [illegible]) Unless [illegible] and advice these patients, on going in hospital is [illegible] they are apt to nullify the effect of the mental [illegible] category C. In particular [illegible] with the question of what will happen to them when [illegible] tend to regard their category C as a consideration [illegible] medical and therapeutic measures carrying with [illegible] responsibility. Thirdly, there is the examination of men [illegible] seniors for suitability in terms of absence of certain [illegible] and the advising of their disposal. And fourthly, there is [illegible] cases—the early schizophrenic who annoys his Commanding Officer by giggling at him, the perpetual deserter and so on.

Anxiety States and Hysteria

Most observers are agreed that in the [illegible] hysteria is a pure illness is very uncommon. Hysterical prolonging of and hysterical complication may be seen in all disorders from anxiety states to psychotic depression but the paralyses and anæsthesias so frequently described in the [illegible] are seldom or very uncommon. Isolated hysterical symptoms are frequent and easily dealt with but usually [illegible] anxiety, mental defect, psychopathy.

The prognosis in an anxiety state, though depends upon what lies beneath—a mental disease, an underlying personality, a mental defect for example, and the degree of resistance that the patient should be brought down to recovery. Diagnosis is usually quite straightforward (coincident organic disease may exist but rarely the principal picture

anxiety [illegible]—apprehension, phobias, bad dreams [illegible]

[illegible] signs of anxiety are flushing of the face [illegible] pallor, [illegible] the deep reflexes and [illegible] of the [illegible] [illegible] unperceptible or gross, through the [illegible] [illegible] must be borne in mind. The [illegible] [illegible] almost invisible but be apparent [illegible] [illegible] influence. It is [illegible] impossible [illegible] influence peculiar to the community [illegible] [illegible] In the severe cases the [illegible] expressive fixed expression in the [illegible] can [illegible] is the patients come through the [illegible] [illegible] must be carefully distinguished from [illegible] [illegible] patients in [illegible] [illegible] from some previously healthy [illegible] [illegible] with complaint of [illegible] [illegible] high [illegible] This is particularly [illegible] [illegible] in shock and there seem [illegible] that [illegible] pass through to full drift. In [illegible] the [illegible] [illegible] unpleasant [illegible] the patient is [illegible] [illegible] the exclusion of [illegible] [illegible] [illegible] than the [illegible] stage in the [illegible] [illegible] when seen for the [illegible] the patient [illegible] [illegible] and [illegible] [illegible] "imagination" and [illegible] [illegible] [illegible]

[illegible] treatment for [illegible] [illegible] [illegible]

despite [illegible] behaviour and form [illegible] lon Some [illegible] a very difficult [illegible] Sitiations One [illegible] the miners is a [illegible] mildly depressed [illegible] solitary and [illegible] He [illegible] Barracks with [illegible] efficiency except [illegible] approximately [illegible] monthly period [illegible] episodes [illegible] behaviour [illegible] apparent reason [illegible] and in some [illegible] minutes [illegible] consciousness [illegible] all the [illegible] The [illegible] fusion and subsequent [illegible] usually [illegible] has rather than in the Guard House By [illegible] and mild sedation he has recently achieved [illegible] after what he calls his smashing feelings

The inadequate and those of him and the [illegible] exhibitions [illegible] what is proportionately a quite considerable [illegible] It is interesting [illegible] him often the inadequate psychopath over compensates by under [illegible] and athletic pursuits and various physical [illegible]

Summary

Affective disorders and hysterical reaction have been shortly discussed and an indication has been given of the manner in which a [illegible] prognosis can be made and of therapeutic measures that are possible under Barrack conditions The importance of awareness of the presence of mental defect and psychopathic state in neurotic [illegible] is stressed Established psychosis except in diagnosis does not fall within the scope of a Barrack psychiatrist It is important that when men are recovering from mental illness in Barracks they should not be left entirely to their own devices Most of them tolerate idleness and boredom very badly In Chatham it has been found possible to organize these men into a working party engaged in outdoor work under the orders of the Battalion Commander Regular physical training has also proved most valuable

In general the Psychiatrist's task is to render the maximum number of his patients fit for sea in the shortest time The remainder must be sent to posts with which they can cope with a reasonable chance of not breaking down And finally in the case of those incapable of any service at all in target areas survey to permanent shore service must be proceeded with and subsequent draft to somewhere where their services can be utilized

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FURTHER SOUTH SEA ISLANDS

By Surgeon Lieutenant R. Vaughan Jones, R.N.

In my last article I described the cruise of H.M.S. *Wellington* among the Gilbert and Ellice groups of the Pacific Islands. Later we sailed over a thousand miles south-west to groups of islands which are of volcanic or coral formation, and thus have high mountains as well as soil which will support all types of vegetation. They include the New Hebrides, the Santa Cruz group of Islands, and the Solomons. The Gilbert and Ellice Island groups are inhabited by Polynesians who constitute a mixed stock of various types. The islands I am about to describe are inhabited by an entirely different people, the Melanesians. They are negroid in type, that is black haired and dark skinned, medium of stature, long headed with receding foreheads, broad noses and protruding jaws.

The New Hebrides are a chain of islands about 480 miles long, lying between 13 degrees and 18 degrees south of the equator, with a population of 40,000 to 60,000. The soil is rich and fertile, copra, cocoa and coffee are exported, and it is believed that they will prove a source of great wealth when fully developed. The group is administered as a "Condominium" state, that is equally by the French and British Governments, which gives rise to considerable difficulty to the interpretation of the different languages, the descriptive term the "Pandemonium State" has well been applied to this group of islands.

If every letter in the group were carried out in French or English it would not be too bad, but the native dialects are so varied that a third language has had to be evolved, which is a form of pidgin English, known as "Beach la Mar." This extraordinary language is spoken by both English and French, in fact the Colonial Service Officers stationed in these groups of islands must pass an examination in this pidgin English, as there are so many native dialects. "Beach la Mar" is really a very debased form of English, thus a robin is described as "Small bokkes (meaning box) him belong man, you scratchum belly, he sing sing loud," and a careless sir becomes— "Bokkes he no have man he talk." An aeroplane is spoken of as "Launich (Launch) belong Jesus him fly." A strange thing about this weird language is that, when is the rascal observer can sometimes understand what a native says in pidgin English, it is quite impossible for the native to understand English however clearly spoken. The scene at the joint court at Vila, presided over by a French and English judge, when the case of a Chinese who can only speak the local pidgin English is being tried, must be left to the imagination.

In the New Hebrides there are two separate sets of postage stamps, one with French legends and one with English, and the *Colonial Service Gazette* is printed with two columns to a page, one column being in English while the other one contains a literal translation into French, which is an consideration for them.

When a ship enters the harbour at Vila, the central port of the group, pratique is granted by the English doctor, and then the certificate must be submitted to the French medical authorities before it becomes official. At

the present moment the English medical establishment in [illegible] around a Mission Hospital on the small island of Iriki in Vila [illegible] the French have their own Colonial Service Hospital in the [illegible] British native medical practitioners serve a term of duty. Malaria and yaws (Framboesia) are endemic diseases in the group and a controversy has arisen between the French and the English medical administrations over the correct treatment for the latter. Yaws is being eliminated from these islands by means of arsenical injections which are given by missionaries and native medical practitioners, the natives in the remoter villages being visited periodically by travelling medical officials. Although it is realized by the English administration that the proper treatment of yaws demands regular courses of injections at frequent intervals, it is known by experience that even a fully one or two injections are given to the native with yaws his condition unmistakably improves. The French state very definitely that in proceeding to administer one or two small doses of arsenic is this renders the patient arsen-resistant, therefore they prefer not to give arsenic at all unless the patient can be admitted to hospital. This is impossible as many of these natives living in bush villas and can only come down to meet the medical party for a matter of hours. Moreover, although they may quite enjoy the first injection of Stick Medicine, as they call it, they do not [illegible] feel inclined to stay for the second injection. Syphilis is believed to be very much uncommon in either the Solomon or New Hebrides group of islands, and yaws very prevalent. Within I think this latter disease is gradually being eradicated from the groups by the administration of arsenical preparations, and in proportion as many of the natives cover as wide an area as possible should be effectively cured. Anti-malarial measures are in force, and eventually the [illegible] should disappear despite the humidity of the climate and the large areas of stagnant water.

Mele village being within easy distance of Vila was one of the cleanest and best organized native villages that I visited. On our arrival the natives who were formed up in a square sang our National Anthem and the humanized minor tunes of their music gave the familiar tune a new lilt. Various smaller places in the New Hebrides were visited, of which Bushmans Bay on the island of Malekula was the most interesting. Here we were able to see some really primitive specimens of humanity. About thirty of these people were collected by the missionaries and brought down to the beach for our interest. Several of the villages had informed the missionaries that it was not convenient to spare time to come down as they were engaged in an inter-village war. There is reason to suppose that these people still retain cannibalistic inclinations, and if a native leaves his village he only hears that the language of the neighbouring village is much different from his own, but that he is also likely to be set upon and eaten. One of the last expeditions of H.M.S. *Challenger* on arrival in New Zealand was to send immediately for Bushmans Bay on a punitive expedition against the native natives for the murder of a missionary. Of the [illegible] on the beach none was over five feet in height, and they wore little beside a sporran of guide. They were naked and had their faces painted with [illegible] resembling red ochre, and into their belts were stuck long knives. They sang a song which had no tune, but was merely a droning

[illegible] they shrilled [illegible] primitive [illegible] of dancing at then Polyn[illegible] Some [illegible] work. [illegible] These people [illegible] [illegible] [illegible]

[illegible] especially by the travelling medical [illegible] native medical practitioners on tour. Medical work is [illegible] times. At one of their stations I extracted a tooth from a native woman from the hills. He had enormous teeth set as firmly as rocks in a reef. He took the local anæsthetic very well, though I think it was really unnecessary for the native has a very high threshold for physical pain. The offending tooth—the only decayed one in his mouth—was soon out and he slyly produced a piece of unpolished turtleshell and presented it to me.

Whilst in Sugarloaf Channel, where there is a well-established French Hospital, I had the opportunity of visiting the central Mission of the Seventh Day Adventist Mission Society. These good people never eat meat and they even keep their hens away from the cocks in the poultry runs in order never to eat a unfertilized egg, which they regard as meat. They [illegible] "Moramu," which no doubt provides them with the [illegible] they would otherwise lack. Our head cliff in the New Hebrides was a small Methodist Mission at Aoba where we found that the children were encouraged to go almost naked. At puberty the girls adopt a slip. Generally speaking, they were fine healthy people. I saw several patients in the Vella Mission Hospital. One of the cases was of a native with sabre [illegible] due to syphilis. I also performed some [illegible] for the missionaries and extracted all four back teeth from a very [illegible] native who had already suffered with bilateral abscesses [illegible] and had pus in one of his cheeks and discharged pus through the [illegible] female.

The [illegible] and infested with [illegible] rats and cockroaches and other pests, the [illegible] yet another contrast between these volcanic Pacific Islands and the Coral Islands of the other groups.

On the way north we called at the Island of Tucopia in the Santa Cruz group because in vain had been hunted on the cliff tops and it was thought that help was needed. The island is of volcanic origin and its mountains rise to a considerable height. After reaching the island so that we should be prepared against any possible attack we then near and were met by about fifty war canoes containing natives whose gestures seemed peaceful enough although they were wildly excited at having seen a warship before. They came alongside and were allowed on board. They were remarkably well built though many of them suffered from skin diseases and presented a horrible picture. Most had their ears bored and wore ornaments in the lobes and each all of them wore a tiara or matter of pearl shell fish here around their neck. Their only raiment was a girdle of tapa or cloth made of beaten bark. There were ten native missionaries on the island and the Mission ship had called there twice or more before we could therefore [illegible] with them through the agency of a Mission boy. To the delight of [illegible] he was allowed to fire our saluting gun but after the second shot [illegible] that we then or were [illegible] explained that his wives would [illegible] leaving the island. Their hair fashions varied from short [illegible] and straight coiffures and they painted themselves with [illegible] paint. I have already mentioned [illegible] it appeared that this soil [illegible] valuable that it was used as a form of native currency from [illegible] I judged it to be mercuric oxide.

[illegible] instrument [illegible] sharpened [illegible] [illegible] [illegible]

[illegible] for these natives [illegible]

[illegible] the Solomon Islands [illegible] hundred [illegible] miles long. [illegible] Vella [illegible] Their [illegible] plum [illegible] A recent [illegible] Suka [illegible] Colonial Surveyor [illegible] and letting several [illegible] Rennell [illegible] and trying to do [illegible] entered by the Admiralty [illegible] the name of The Solomon Islands They are rich in gold and [illegible] the climate is unhealthy for white people and malaria is prevalent The Shark is worshipped as a god throughout this group of islands and at Santa Anna where we landed first there was a small fetish house containing three model sharks made in black wood handsomely inlaid with mother of pearl shell each model containing the skull and bones of a native who had been taken by a shark We were given a great welcome at this place by about twenty war canoes that paddled around the ship their occupants singing and shouting at the top of their voices Three dances were presented before us one of which was rudely performed This dance told the story of the fight of the Men from the Trees with the Men from the Sea The Men from the Trees were of course the inland tribesmen and they wore a sort of bark hood grotesquely painted and fought a mock battle with the Men from the Sea that is the coastal tribes When the Men from the Trees first appeared they pretended to be ill and unable to walk as if they were dosed with Stick Medicine that is to say they were given an inscenal injection in pantomime by a witch doctor On receiving the injection they each to turn fell flat on the ground and stayed there for a [illegible] or so as though dead Then they rose apparently at first and [illegible] is started may cured I have been told that the natives are so keen [illegible] an inscenal injection because of its tonic effect that many of [illegible] injections though not suffering from yaws The natives wear [illegible] and sticks silvered very beautifully with mother of pearl shell and when in battle they defend themselves against the arrows of their enemy with an oddly shaped shield which resembles an Australian boomerang with a handle They perforate their ear lobes and elongate the perforated lobe by pulling on it until it hangs down and in some cases touches their shoulders I saw several natives with round pieces of wood in their ear lobes but the prize was undoubtedly taken by one proud native who carried a small alarm clock in his ear

Tulagi the capital of the Solomon Islands is a very pretty spot indeed and is quite a small town Gold has been discovered in certain mines in the Solomon Islands and I was told that sections of a metal measuring tape with unknown calibrations had been discovered in one of the gold bearing river beds This tape is probably of Spanish origin and dates back to the discovery of these islands in the sixteenth century by Mendana even to this day some of the islands have Spanish names such as San Cristoval Guadalcanar and Santa Anna At the Treasury I saw several strings of shell money Shell money is peculiar to the Solomon Island group and it consists of strings of small shells rather like beads Although it is gradually being withdrawn

from [illegible] still current in some places [illegible] with about [illegible] shillings [illegible] still go round your arm. At Tulagi there is an excellent girls' boarding school and a large hospital built on European lines although very clumsy. This type of construction means that the natives are crowded together in units an unnatural form of existence for them. The hospital was well run but was in great need of modern equipment having an X-ray apparatus and in exceedingly out-of-date operating theatre. Altogether the hospital admits about 600 patients each year, the disease most commonly seen being malaria which is very prevalent in the Solomon Islands. Nevertheless (which is a serious public health problem as natives are travelling to and in hospital and thus tend to spread infection) leprosy, yaws and hookworm. Only a few cases of venereal disease are seen and these mostly in natives who came from Rennell Island which is infected with gonorrhoea. Syphilis does not exist among the native population. While in Tulagi I was able to visit the headquarters of the Melanesian Mission in Siota which has some miles up the mangrove fringed canal separating the two main groups of islands. Here I saw the remarkably fine native church, the Cathedral, a historical church of indigenous trees and grasses and furnished with attractive chairs in the usual bulbous gum-bamboo furniture. The Altar front is beautifully constructed from native woods inlaid with mother of pearl and the font was made from one large Giant Clam shell supported on a finely carved pillar. The Giant Clam is a huge bivalve and this particular one was at least a yard in diameter. The ceremonial crucifix was also beautifully made and it is shown the crucifix that belonged to the martyred Bishop Patterson who was attacked and killed by the natives about seventy years ago suspected of being a recruiter of slave labour. I also saw the grass mat his bleeding body was wrapped in after the crime. There is a small Sick Quarters at the Mission and the Sister in charge was taking a great interest in the complementary feeding of babies and is achieving good results with various proprietary foods. On the way back to Tulagi we visited the excellent children's training school run by the Mission at Bungana where there are girls from many Pacific Islands ranging in age from seven to fourteen all dressed most sensibly in a short blue skirt. Their faces were very happy and I was told that they disliked returning to their distant villages after their schooling. They are drawn from many islands and the language difficulty is overcome by the use of a dialect called Mota which is a true native language based on sounds common to all the islands. This language seemed to me to be much better than the "pidgin English" which is so current in the group. At this school great attention is paid to teaching the children arts and crafts which will be useful to them on their return to their villages. They are taught weaving, sewing, secrets and the culture of crops and an attempt is being made to preserve in their teaching the traditional methods of building construction and maintaining many of which have been lost. These arts are normally the secret knowledge of one expert person passed down to him by his father when on his death bed. The father is not anxious to pass on the knowledge before he is moribund because knowledge is strength and the son with this necessary knowledge usurps his father's place in the tribe. Thus the old man often delays telling his son these secrets until too late.

[illegible] fishing [illegible] [illegible] [illegible]

[illegible] because the sharks in the pool [illegible] full [illegible] darkest layer of the [illegible] Neither [illegible] for us the remaining [illegible] the shark.

We entered an especially sacred part of the village which [illegible] was tabu for ladies and congregated around a boat slipway [illegible] beach shelved gently to the water. Here the two hereditary priests of the village who were in charge of the sharks held sticks about a foot long to the ends of which were attached inflated pigs bladders. In the water lazily swimming around were two full-size sharks accompanied by their attendant pilot fish, sucker fish and young. The two big sharks came right into the little bay until they were so far out of the water that the old men could bend down and scratch their heads. The young sharks did not come so close. This performance went on for some little time, the sharks making no attempt to seize the pigs bladders with which the old priests teased them. They seemed quite content when offered the bladder to suck it in a lazy disinterested fashion. It was a remarkable sight to see these monsters lying placidly half stranded on the seashore whilst two old men tickled their backs. Afterwards we were allowed to inspect the sacred channel house of the cult although we could not go further into it than a barrier allowed. Here there were thousands of skulls arranged closely in rows around the shelves in the native hut, each one wrapped in a twist of native plaited grass. The old priests told me through an interpreter that at their ceremonial feasts they would take down certain of these skulls and put them in a row in front of the table so that they could enjoy the celebration. These skulls were those of former priests and chieftains and this was how the history of the race was recorded. Before leaving the island we visited the Royal Mint and watched the production of Shell Money. The whole of the operations from the chipping of the small bits of shell and the boring of them with a central hole by an extremely primitive twist-drill similar to that used by old watchmakers until the final polishing was carried out by the Queen and the women of the Royal Family. Only the final polishing of the money between two flat boards after it had been strung on a string was done by men.

I was given various interesting weapons before leaving, fishing spears with their spines made out of native thorns and killing spears long and beautifully balanced made from springy coconut wood fired until hard as iron. Apparently the firing in some way hardens the sap of the coconut wood and binds the fibres of the wood together thus strengthening the spear. War clubs of all varieties from old family possessions polished with age and probably used in battle down to the modern undecorated ceremonial walking stick were easily obtainable by barter for such commodities as sugar and chocolate. Some of these clubs were beautifully decorated with the characteristic mother of pearl inlay work. Finally I was given a most useful heavy walking stick made from Rennell ebony.

Returning to Suva from the distant Solomon Islands we called at Rotumah—an outlying island of the Fiji group—and saw dances performed by this race who are akin to Fijians but yet have a language of their own. They presented three dances—the first one taught them by Missionaries and

consisting of [illegible] and [illegible] second [illegible] where the [illegible] women [illegible] is dressed in [illegible] [illegible] [illegible]

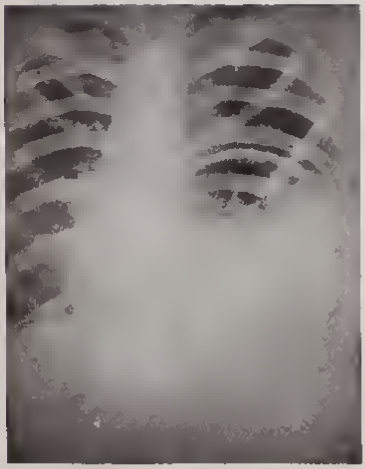
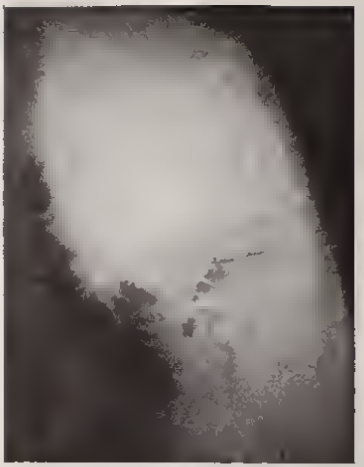


Fig. 1



[illegible]

Figs. 1 and [illegible] with gas fill [illegible] and

[illegible] vist single [illegible] reality [illegible] is quite [illegible]

It will be [illegible]

The vent[illegible] in the neck [illegible] with it the [illegible] of the primitive [illegible] portion [illegible] that is [illegible] parts of the [illegible] union betw[illegible]

In eventrat[illegible] there is no hiatus [illegible] amongst other [illegible]

[illegible]

[illegible]

[illegible]

Fig. 4.—Earl [illegible]

[illegible]

[illegible] the mesoj[illegible] with a wount [illegible] the stou[illegible] c (Kent)

If [illegible] would [illegible] and the [illegible] nerves [illegible] intestine

[illegible] the renal nerve supply to the [illegible] that pain would be expected [illegible] that [illegible] symptoms could be the same [illegible] the physical [illegible] there would be [illegible] these [illegible] of the bowel [illegible] the [illegible] suffering from [illegible] bowel [illegible] but it would be [illegible] the [illegible] into [illegible] the diagnosis [illegible] should be [illegible] [illegible]

THE HEMORRHAGIC SEPTICAEMIA KNOWN AS A CASE OF HYPERNEPHROMA OF THE KIDNEY

By Surgeon [illegible] R.N.V.R.

A young seaman [illegible] Hospital [illegible] felt [illegible] [illegible] to the [illegible] [illegible] [illegible]

[illegible] mononuclear cell but there were no [illegible] [illegible] 96 mgm per 100 c.c. and [illegible] Before meal 3.0 1 hour 8.8 2 [illegible] [illegible] 112 mm [illegible] pyelogram and the [illegible] [illegible] present. The B.S.R. [illegible] 1 hour 13.1 mm 2 hours 16.6 [illegible] [illegible] symptoms again [illegible] [illegible] The urine became free [illegible] [illegible] pyelogram was normal [illegible] [illegible] the left side [illegible] [illegible] cystoscopic examination [illegible] [illegible] cell in [illegible] [illegible] [illegible]

[illegible] shell [illegible] and he [illegible]

He w[illegible] leg [illegible] rectrical [illegible] plat[illegible] [illegible] on walls [illegible] was th[illegible] felt rather [illegible] aspect of the [illegible] in the [illegible] Long [illegible] exposed [illegible] a sepa[illegible] four inches [illegible]

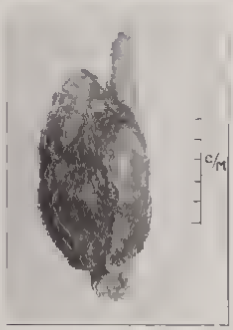


Fig. [illegible] [illegible]

possibly [illegible] wall, but [illegible] [illegible]

[illegible] make [illegible] that [illegible] [illegible] [illegible] in the [illegible]

After the [illegible] but flexion [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

of [illegible]
pe[illegible]
spe[illegible]
whil[illegible]
to sever[illegible]
he suc[illegible]

Ne[illegible] affection
among [illegible] epilepsy
In [illegible] though
co[illegible]
comfort[illegible]

Th[illegible]
developed [illegible]
When [illegible]

[illegible]

(2) **An** [illegible]
Without [illegible]
person [illegible]
[illegible]

[illegible] only one example [illegible] —[illegible] reflex epilepsy [illegible] stimulus whether [illegible] of reflex epilepsy [illegible] epilepsy [illegible] (2) the rater [illegible]

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REPORT OF A SUCCESSFUL OPERATION FOR GENERAL PERITONITIS THE SEQUELA OF A 36 HOURS PREVIOUS PERFORATION OF A DIVERTICULITIS

By Surgeon Commander H L Gleave F R C S [illegible]

On July 14 1941 the patient was under investigation in a medical ward of the [illegible] Hospital Hong Kong

He had been admitted several weeks previously and was under observation [illegible] case of pyrexia of unknown origin Originally he had had multiple furuncles [illegible] being present on the left buttock on admission

At this time all staphylococcal infection had cleared up though he still had [illegible] temperature that varied from 99° to 101° F His only complaint [illegible] fullness in the epigastrium after meals

Examination —He was a fat man of hypersthenic temperament General [illegible] and rectal examinations negative

Barium meal showed some filling defect of the stomach

Barium enema and a straight sigmoid on the subsequent day were both [illegible]

[illegible] (1) Colon negative on barium enema (2) Kahn negative (3) [illegible] (Kulz Jarmuth) (4) Lumbar puncture [illegible] 15) Pond Bunnell test negative (6) Widal [illegible]

Diagnosis —The clinical diagnosis appeared to rest between a perforation of [illegible] and a diverticulitis however the harmless enema had not [illegible] diagnosis At this time we thought there was no signs rigidity or guarding [illegible] of a localised peritonitis

He was seen by Dr Jessie Wilkinson of Hong Kong University who con[illegible] a diagnosis of staphylococcal septicaemia

[illegible] 11 1941 at 0 [illegible] the patient was so ill with sudden severe con[illegible] I found him very shortly afterwards and diagnosed [illegible] The lower part of the left colon [illegible]

[illegible] was placed in Fowler's position and given sips [illegible]

[illegible] abdomen was tympanitic He was gross distended and [illegible] The left side and lower part of the abdomen [illegible] the epigastrium hyper resonant

[illegible]

[illegible]

[illegible]

[illegible] al ab was g n e d [illegible]
[illegible] ng, the gl there w [illegible]
[illegible] mat from wh [illegible]
[illegible] d always been well [illegible]
[illegible] During the fi [illegible]
[illegible] could f [illegible]
[illegible]
[illegible] Oct [illegible]
[illegible] Sick Bay. The [illegible]
[illegible] state of coll [illegible]
[illegible] 1926. He w [illegible]
[illegible] the medical [illegible]
[illegible] ns

[illegible] 98 1 [illegible] 80 Respi [illegible]
[illegible] ing of the right [illegible]
[illegible] ll m w s [illegible]
[illegible] and [illegible] Right [illegible]

[illegible] w l th d s
[illegible]
[illegible]
[illegible]

[illegible] phen[illegible] dren[illegible]

[illegible] st[illegible] th[illegible] show [illegible] degeneration [illegible]

It [illegible] into th[illegible] One [illegible] [illegible] [illegible]

[illegible]

REFERENCE

Cushing [illegible] Brain (1928) Blood Vessel Tumours of the Brain

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OBSERVATIONS ON TWO BROTHERS WITH PERONEAL MUSCULAR ATROPHY

By Surgeon Lieutenant F. J. O'Malara, R.N.

[illegible]

Case Records

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] think [illegible]

[illegible]

[illegible]

[

[illegible]

THE TREATMENT OF VENEREAL DISEASE IN A SUBMARINE DEPOT SHIP

By Surgeon Lieutenant Forster Jones, R.N.

A [illegible] of all cases of venereal disease treated in the ship [illegible] April 1940 and concluded in October in the following year, a period of [illegible]

The ship left Hong Kong in April 1940 and, after a month at sea, [illegible] Vancouver she has remained in harbour for the [illegible] period. Here, in addition to submarine [illegible] complement of various small ships [illegible] together with a large influx of passengers [illegible] calls and the like have made the keeping of figures [illegible] manipulated as to many uses, ranging from [illegible] left the ship before it had ended [illegible] although a large number of cases remained [illegible] would be studied as an index of the trend [illegible]

[illegible] [illegible] and [illegible] uses of venereal sores.

[illegible]	Total number	Available for study
[illegible]	113	77
[illegible]	62	58
[illegible]	11	[illegible]
[illegible]	2	—
	190	[illegible]

[illegible]

[illegible]

[illegible]

[illegible] stulina is four hours [illegible] Day and 6 gum [illegible] total [illegible] All institutions [illegible] to [illegible] is given in shell [illegible] by [illegible] instruments [illegible] slowly [illegible] is [illegible]

[illegible] whose [illegible] any [illegible] the [illegible] out [illegible] not [illegible] purgatives

[illegible]

Diagnosis	[illegible]	[illegible]	Days to [illegible]	Later treatment	[illegible]
[illegible]	[illegible]	1	17	43	[illegible]
[illegible]	[illegible]	11	9	34	[illegible]
[illegible]	[illegible]	[illegible]		23	[illegible]

[illegible] is given in [illegible]

Dosage	[illegible]	[illegible]	Dosage II Number	[illegible]
Over [illegible]	[illegible]	[illegible]	11	[illegible]
Over [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Over [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Over 4 [illegible]	[illegible]	[illegible]	1	[illegible]
Over [illegible]	[illegible]	[illegible]	1	[illegible]
7 [illegible]	[illegible]	[illegible]	11	[illegible]
[illegible]	[illegible]	[illegible]	43	[illegible]

[illegible] although [illegible] therapy [illegible] four [illegible] relapse

[illegible]

A [illegible] previously [illegible] are [illegible] of [illegible]

Diagnosis	[illegible]	[illegible]	[illegible]
G[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Brethren [illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Co[illegible]	[illegible]	[illegible]	[illegible]
Comp[illegible]	[illegible]	[illegible]	[illegible]
Fr[illegible]	[illegible]		[illegible]
Fi[illegible]	[illegible]		
Arti[illegible]	[illegible]		

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	Dosage I	Dosage II
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

Cases of [illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Correspondence

[illegible]

[illegible]

surrounding [illegible]

[illegible]

[illegible]

[

Diabetic [illegible] The closely [illegible] modified [illegible] Here also [illegible] dermatitis [illegible]

Prophylaxis [illegible] chlorides [illegible] least daily wash [illegible] month the [illegible] and apply Jahns [illegible] washing. Cases [illegible] which should be [illegible] for [illegible] or sulphur [illegible] epidermophytic [illegible] skin [illegible] sodden skin [illegible] tank.

It [illegible] affected [illegible] *Dermatitis* in the bathroom [illegible] which all [illegible] talk to them [illegible] help to reduce the spread of [illegible]

I [illegible]

H M S *Indra* [illegible]
November 8, 1940

[illegible] W S [illegible]
Surgeon Commander, R N

Reviews.

ARCHITECTURAL CHRISTMAS IN ARTHROPLASTY. By H A Bettison, M A, B Ch, F R C S, Surgeon Orthopædic Surgeon Suffolk and Norwich Hospital and Jenny Lind Hospital for Children, Edinburgh, F R S Edinburgh. Price 21s net (postage 7d).

A white elephant. The principles of arthroplasty in a gradually resulting in [illegible] [illegible] [illegible]

News of the Service.

BIRTH

[illegible] Holly Walk [illegible] Commander Dennis Slade M B [illegible] Nina Ross

OBITUARY.

[illegible] to the relatives of the following officers [illegible]

[illegible] Surgeon Geoffrey Vernon C B was born in 1861 and after [illegible] in 1886 He entered H M S [illegible] a year later and [illegible] Surgeon Captain in 1905 His first ship was the [illegible] He was placed on the retired [illegible] He married [illegible] and [illegible] Fellowship of the Japanese Society of [illegible] He Swedish order of Sacred Treasure [illegible] which Government [illegible] Surgeon Rear Admiral Alfred died on [illegible] 1914 [illegible]

[illegible] Surgeon Richard Barnett R N V R [illegible] joined M B [illegible] Ch[illegible] He [illegible] in July 1881 After a [illegible] he was appointed to H M S Strafe [illegible] 1911 [illegible] and killed in action [illegible] at the age of [illegible] Fleet [illegible] Officer to the West Riding Mental Hospital [illegible] Cook [illegible]

[illegible] Surgeon Lewis Pendleton R N V R [illegible] American [illegible] 2112 East 17th Street Brooklyn New York [illegible] killed within a week of his joining H M S [illegible]

[illegible] Surgeon Percy Percival Percy Christian R N was killed with his wife [illegible] Mansion [illegible] March 1916 After qualifying at Guy's Hospital he [illegible] 1888 He served during the Boer war to H M S Galatea and [illegible] to Surgeon Commander on 1st March 1905 [illegible] and had with the rank of Surgeon Captain held [illegible] His last appointment was to Mona Island [illegible] Thus [illegible]

[illegible] well known figures at Mull [illegible] kept [illegible] and [illegible] others He had been Surgeon Captain [illegible] Mull [illegible] had taught [illegible] numbers of wounded during the first year and his [illegible] his friends amongst the sick people and [illegible] excellent [illegible]

[illegible] Surgeon Lieutenant Colonel R N V R Mull Cottage Hospital St Ives entered [illegible] Surgeon Commander [illegible] the club [illegible] in H M S [illegible] the rank of Surgeon [illegible] 1887 with the rank of Surgeon [illegible]

[illegible] Surgeon Major Mackay C B R N was appointed Surgeon in 1886 and Staff Surgeon [illegible] During the first war he served with [illegible] was with the Royal Marines [illegible] Admiral [illegible] Spitfire The following year he was owned of the [illegible] H M S [illegible] the [illegible] Fleet [illegible] own request [illegible] Captain after which joining the staff of H M S [illegible]

Surgeon Rear Admiral W H [illegible] was Surgeon Captain [illegible] Mackay C B [illegible] Will he passing the Royal Naval Medical Service [illegible] Hill Guard

[illegible]

TEMPORARY SURGEON LIEUTENANT DAVID ANDERSON MILNE, R.N.V.R., [illegible] H.M.S. [illegible] on June 1, 1940, and was shortly afterwards appointed to H.M.S. [illegible] where he died from an accidental gunshot wound on January 19, 1942. At the time of his death he was D.A.M.S. and Miss Milne of Wilcombe, Gilsland, [illegible] Cumberland.

TEMPORARY SURGEON LIEUTENANT ARTHUR ERSKINE SHERWELL, R.N.V.R., was [illegible] in H.M.S. *Rhana* in November, 1942. After his graduation at Edinburgh University he studied in turn at Bristol, where he was both academic and athletic [illegible] in the [illegible] following, [illegible] applications to sea, [illegible] Hull, Glasgow and later in Stockholm. He joined the R.N.V.R. in [illegible] 1940, [illegible] as a popular and well-[illegible] Sub-Lieutenant.

A [illegible] was Arthur Erskine Sherwell. [illegible] his [illegible] and happy family and very good companion. He was [illegible] in the [illegible] Bristol Grammar School [illegible] Bristol University, well certificated for your battle [illegible] and [illegible] at his work, passed all his exams with [illegible] and [illegible] practice, and joined an expedition to Iceland.

[illegible] Officer in H.M.S. *Rhana* [illegible] was an enemy [illegible] and [illegible] was [illegible] quantity of [illegible]

SUBLIEUTENANT ALBERT DAVIS SMITH, *R.N.R.*, [illegible] at the age of 140 [illegible] R.N.V.R. [illegible] his name [illegible] in the [illegible] H.M.S. [illegible]

He [illegible] sixteen [illegible] thus [illegible] friendship for [illegible] the [illegible] Rhodesia and [illegible] Thus was [illegible] way I work in the [illegible] which [illegible] wished [illegible] Royal Navy [illegible] Mediterranean [illegible]

Born [illegible] the son of [illegible] Whitby, Yorkshire, [illegible] Dulwich and [illegible] Royal Naval [illegible] H.M.S. [illegible]

[illegible] Naval Hospital Chatham [illegible] as Senior Medical Officer [illegible] Admiralty in 1926 [illegible] Surgeon Captain [illegible] Medical Officer [illegible] Royal Naval Barracks [illegible] Medical Officer of the Royal Marine Infirmary [illegible] Medical Officer [illegible] Medical Inspector Director for H.M.S. [illegible] which he [illegible] with the exception of a short period [illegible] Medical Officer [illegible] Medical Officer [illegible] Naval Medical Service [illegible] personality [illegible] During his [illegible] the Admiralty [illegible] Director General of Medical Services [illegible] Rear Admiral [illegible] Medical Inspector [illegible] Naval Medical Service [illegible] Medical Officer [illegible] Medical Officer [illegible] Medical Officer

[illegible] ted in the University [illegible]

[illegible] in the service [illegible]

[illegible] RNVR [illegible] HMS [illegible] Of the [illegible]

[illegible] of his year [illegible]

[illegible] Fleets of the Crown [illegible]

[illegible]

[illegible] Wireless Engineer [illegible] KBE [illegible]

[illegible] KBE [illegible]

[illegible] RNVR [illegible]

The following [illegible]

Surgeon [illegible] RN [illegible] OBE [illegible] RN

Temporary Surgeon [illegible] RNVR

Surgeon [illegible] RN

Surgeon [illegible] W Wyatt RN [illegible] HMS [illegible]

Surgeon [illegible] W M Brown RNVR [illegible]

HONOURS

CB

[illegible] Admiral Gordon Grant [illegible] KBE [illegible] MS MB [illegible]

CBE

Miss [illegible] Matron in Chief Queen Alexandra's Royal Naval Nursing Service

OBE

Surgeon Commander [illegible] Dr [illegible] Wyatt [illegible] Barton MB BS RN

Surgeon Commander [illegible] Cuthbert D MB CM [illegible] RCS HS/NVR

MBE

Surgeon [illegible] Walter [illegible] MB CB RNVR

Temporary Surgeon [illegible] Eric Anthony Spencer [illegible] MSSV RNVR

Warrant Officer [illegible] W [illegible] RNVR

DSC

For [illegible] during all days [illegible] and resolute [illegible] the Battle of [illegible]

Surgeon Lieutenant [illegible] Ernest RNVR (HMS *Orion*)

Surgeon Lieutenant [illegible] Bannon McDowell RNVR HMS *Antrim*

Surgeon Lieutenant [illegible] Eric Merton [illegible] RNVR (HMAS [illegible])

Surgeon Lieutenant [illegible] Charles Frederick Harrington RNVR

For [illegible] service [illegible] and devotion to duty while serving with the Home Fleet in Norwegian waters in the Spring and Summer of 1940

Surgeon Lieutenant [illegible] W [illegible] Boyd RN HMS *Dipavali*

Temporary Surgeon Lieutenant [illegible] Sylvyn Emil [illegible] RNVR (HMS [illegible])

Mentioned in Despatches

Surgeon Lieutenant Albert Edward Mills RN has been mentioned in despatches for his [illegible] Surgeon Lieutenant [illegible] Walter Gordon [illegible] RNVR for [illegible] while HMS [illegible] was attacked by enemy aircraft

Surg[illegible] Hulmes R N Surg[illegible]
McBoy[illegible] Surgeon Lieutenants [illegible]
Shayh [illegible] Roberts R N V R
[illegible]
Surg[illegible] G[illegible]
Lieutenant [illegible] Roberts R N V R H M S [illegible]
[illegible] Brown R N V R H M S [illegible]
[illegible] Smith [illegible]
[illegible] McHowell [illegible] R N V R [illegible]
[illegible]
[illegible] Bunzy Sugars R N V R [illegible]
[illegible] Surgeon under Reserve in the Middle [illegible]
[illegible] Armstrong R N Temporary Surgeon Lieutenants
[illegible] Warren Warbrooster Douglas Archibald
[illegible] in dispatches

[illegible] *Officers Decorations*

H M [illegible]
[illegible] Ander H N V R
[illegible] H[illegible] H N V R
[illegible] H N V R
[illegible] M[illegible] H N V R
[illegible] W[illegible] H N V R
[illegible] W[illegible] H N V R

A R R P

[illegible] Miss H [illegible]
[illegible] Miss F [illegible]
[illegible] Miss [illegible] Fraddal
Hon Nursing Sisters Miss I M B [illegible] and M[illegible] M Flury
V A D Nursing Members Miss S [illegible] Miss H P [illegible] Miss S Morgan
[illegible] Miss M G [illegible] Miss H [illegible] Miss M N Watson
Miss A Mundy Miss E Merriman Miss E M G King, [illegible] Members

RETIREMENTS &c

Surgeon Rear Admiral F J Gewins C B M B B S retired to the retired list [illegible] 1943

Surgeon Rear Admiral G J [illegible] I H S L R C P placed on the retired list [illegible] February 1943

Surgeon Captain G Yakely O B E M B B C H placed on the retired list February 1942 (in continue in pursuit appointment)

Surgeon Captain (acting Surgeon Rear Admiral) G D G Ferguson M R C S L R C P placed on the retired list [illegible] May 1942 (and re appointed)

Surgeon Captain D R Falconer R N retired to retired list [illegible] January 1943

Surgeon Commander (D) A Macpherson I H S R N placed on the retired list [illegible] regulations and retired [illegible] January 4 1942

Surgeon Lieutenant N A Freeland M B Ch B withdraws with gratuity on [illegible] January 1943

Surgeon Lieutenant A Lessell M B C H B withdraws with gratuity on [illegible] January 8 1942 and transfers to Emergency List January 8 1942 and [illegible]

Surgeon Lieutenant H Laughton Scott M B Ch B withdraws with gratuity on [illegible] of Short Service engagement and transfers to Emergency List January 6 1943 [illegible]

PROMOTIONS

[illegible] Surgeon Commander (H L H Armstrong L R I S [illegible] to be Surgeon Commander [illegible] 1943

Surgeon Commander W I M Sadler M R I S [illegible] to be Surgeon Commander [illegible] 1941

Surgeon Commander C N H Lyal M B Ch B to be Surgeon Commander [illegible] 1941

Surgeon Lieutenant [illegible] R Stewart M B B Ch to be Surgeon Commander [illegible] 1943

[illegible]

[illegible] MB BCh [illegible]

[illegible] 1931

[illegible] MB CM [illegible]

[illegible] MB [illegible] to be [illegible]

[illegible] MB BS [illegible]

Sur[illegible] MB BS MRCS LRCP [illegible]

MRC[illegible] MB BS [illegible]

Com[illegible]

[illegible] DSc [illegible]

[illegible]

Sur[illegible] MB [illegible] BS [illegible]

[illegible]

WARDMASTERS

PROMOTIONS

[illegible] A Ball to be Warrant [illegible] 1942

W[illegible] Commissioned Warrant [illegible]

Warra[illegible] be Commissioned [illegible]

[illegible] 1940

Temporary [illegible] W B Stunde[illegible] ber 3 1941

Temporary [illegible] 1942

Temporary [illegible] 24 1941

S B C P O [illegible] Wardmaster [illegible] Warrant Wardmaster [illegible]

S B I P O [illegible] 1942

S B C P O [illegible] Wardmaster [illegible]

RETIREMENTS

W[illegible] MBE MVO [illegible] 1942 (and [illegible]

ROYAL NAVAL VOLUNTEER RESERVE

RETIREMENTS AND RESIGNATIONS

Temporary Surgeon Captain D B Bickle MD ChB [illegible] nent and [illegible] 12 1941

Surgeon Commander H Tarry Page LD MRCS LRCP [illegible] ber 18 1941

Temporary Surgeon Lieutenant Commander [illegible] MB [illegible] temporary commission [illegible] October 31 1941

Temporary Surgeon Lieutenant Commander [illegible] MB ChB [illegible] Nov 1941

Temporary Surgeon Lieutenant [illegible] MB [illegible] 1941

Temporary Surgeon Lieutenant [illegible] MRCS LRCP [illegible] temporary commission [illegible] January 13 1942

Temporary Surgeon Lieutenant W H H Bold MB ChB [illegible] porary commission [illegible] January 19 1941

Probationary Temporary Surgeon Lieutenant [illegible] appointment [illegible] cally [illegible] November 29 1941

Probationary Temporary Surgeon Lieutenant W L Gordon MRCS LRCP [illegible] appointment terminated [illegible] 1941

Probationary Temporary Surgeon Lieutenant R A Thatcher MB ChB [illegible] commission [illegible] to be [illegible] January 1942

PROMOTIONS

Acting [illegible] Commander H. B. Howell, M.R.C.S., [illegible] Surgeon [illegible] February 19, 1942.

Temporary [illegible] Lieutenant A. Fisher, M.B., Ch.B., granted rank of [illegible] Surgeon Lieutenant Commander, Ordinary, 1941.

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

APPOINTMENTS

Matron-in-Chief (Retired) Miss A. Ralph, G.B.E., R.R.C., T.D., R.N., employed as Superintending Sister, R.N. Auxiliary Hospital, Kilburnbie, January, 1942.

Matron (Retired) Miss N. E. Jones, R.R.C., T.D., R.N., Auxiliary Hospital, Barrow-in-Furness, December, 1941.

Matron (Retired) Miss C. I. Phillips, R.R.C., T.D., employed as Superintending Sister, R.N. Sick Quarters, Faslane (temporarily), January, 1941.

Matron Miss E. Campbell, A.R.R.C., T.D., R.N., Auxiliary Hospital, Shotbolt, December, 1941.

Acting Matron Miss N. S. Barker, A.R.R.C., T.D., R.N., Auxiliary Hospital, Colombo, to sail as soon as possible after December 20, 1941.

Superintending Sister Miss I. M. Walkinshaw to H.N. Hospital, Haslar, November, 1941.

Superintending Sister Miss A. M. Taylor to H.N. Auxiliary Hospital, Haswell, November, 1941.

Acting Superintending Sister Miss N. [illegible] Westaway to R.N. Auxiliary Hospital, Barrow-in-Furness, 1941.

Acting Superintending Sister Miss E. M. Weller to R.N. Auxiliary Hospital, Colombo, to sail as soon as possible after December 20, 1941.

Acting Superintending Sister Miss B. Nicholds to R.N. Sick Quarters, Grimsby, December, 1941.

Acting Superintending Sister Miss F. I. [illegible] A.R.R.C., to H.N. Auxiliary Hospital, Sherborne, February, 1942.

Acting Superintending Sister Miss M. Kennedy to H.N. Sick Quarters, Malvern, March, 1942.

Acting Superintending Sister Miss P. L. Shipton to R.N. Auxiliary Hospital, Colombo, to sail as soon as possible after March 18, 1942.

Acting Superintending Sister Miss D. T. Johnston to R.N. Hospital, Haslar.

Acting Superintending Sister Miss H. C. Clifton to H.N. Auxiliary Hospital, Sherborne, February, 1941.

Nursing Sister Miss H. I. Shrubb to H.N. Auxiliary Hospital, Colombo, to sail as soon as possible after December 20, 1941.

Nursing Sister Miss M. E. Maguire to H.N. Auxiliary Hospital, Colombo, to sail as soon as possible after December 20, 1941.

Nursing Sister Miss F. M. I. Wakelin to H.N. Auxiliary Hospital, Kingston, December, 1941 (to Acting Superintending Sister).

Nursing Sister Miss A. E. M. Gowers to H.N. Auxiliary Hospital, Colombo, to sail as soon as possible after December 20, 1941.

Nursing Sister Miss M. K. Duncan to H.N. Auxiliary Hospital, Colombo, to sail as soon as possible after December 20, 1941.

Nursing Sister Miss S. I. Flavin to R.N. Auxiliary Hospital, Colombo—to sail as soon as possible after December 20, 1941.

Nursing Sister Miss I. M. Blundell to R.N. Auxiliary Hospital, Scrfirth House—to H.N. Auxiliary Hospital, Sherborne.

Nursing Sister Miss M. G. F. Miller to H.N. Sick Quarters, Hinchcliff, [illegible] 1941.

Nursing Sister Miss I. I. Strutt to R.N. Sick Quarters, Grimsby, January, 1941.

Nursing Sister Miss M. I. [illegible] to W.R.N.S. Quarters, Ta Cul, Campbeltown, [illegible] 1942.

Nursing Sister Miss F. M. D. Stephen to Aden, H.N. Auxiliary Hospital, Harrogate, [illegible] 1941.

RESIGNATION

Nursing Sister Miss M. B. Brunell resigned, March [illegible] 1941.

NAVAL MEDICAL COMPASSIONATE FUND

Account of Receipts and Payments for the Year ended December 31, 1941

	£ s. d.	£ s. d.
Balance at Bank on January 1, 1941		
Current Account	15 1 2	
Deposit Account	[illegible]	
		19[illegible]
Deduct: 2½% Consolidated Stock	36 [illegible] 0	
Interest on 3½% Conversion Stock	8 [illegible] 1	
Interest on 4% Consolidated Stock	31 [illegible] 4	
Interest on 3½% War Stock	[illegible] 1	
		18[illegible] 4
[illegible]		[illegible] 0
[illegible]		[illegible] 1
Deposit Account		[illegible] 1
		4785 [illegible] 6

[illegible] Fund [illegible] Bank of England on the [illegible] of the Trust as at December 31, 1941

[illegible]	£10,000	3½% Consolidated Stock
[illegible]	£1,000	3½% Conversion Stock
[illegible]	£[illegible] 10s. 4d.	4% Consolidated Stock
[illegible]	£650	3½% War Stock

[illegible] Stock [illegible] Bank of England [illegible] 1941 [illegible] Bank of England [illegible] 1941 [illegible] Stock [illegible] 1941 [illegible] Stock [illegible] 1941 [illegible] Stock

JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE

Balance Sheet 1941

Assets	£	s	d	Liabilities	£	s	d
Balance in Bank 31.12.41	914	8	7	Nil			
£100 3% Funding stock	100	0	0	Balance Credit	914	8	7
£800 3½% War Loan	800	0	0				
	£914	8	7		£914	8	7

Presented at the Annual Meeting of the Management Committee held on February 1st 1942

(Sgd) L. Warren
Acting Rear Admiral

(Sgd) H. F. Barnes
Surgeon Captain R.N.
Manager and Joint Editor

Volume [illegible] XVIII [illegible] 1942 No [illegible]

Journal
of the
Royal Naval Medical Service.

Articles

SOME SOUTH SEA ISLANDS (PART II)

By Surgeon Lieutenant R. VAUGHAN JONES, R.N.

The Fiji group of islands (spelt Feejee in old maps) was discovered by Tasman in 1643. In 1858 the native Chief Thakombau finding himself in debt to the American Consul on account of certain things made up offer the islands to Great Britain, which was refused. Thakombau set himself up as a King with the assistance of Europeans interested in the Colony and later a further offer Fiji became in 1874 a British Crown Colony. Ratu Edward and Ratu George, the grandsons of the old King Thakombau, are today living at Levuka, the old capital of the Colony, as government officials. Ratu Edward, who was educated in England, showed me his grandfather's gold ring of Kingship.

The present capital of Fiji is Suva, a pleasant town with a lake behind it, surrounded by coral reefs, the islands the usual lots being of volcanic origin. On coming alongside the wharf one immediately notices the disinfectant, but pleasant smell of copra, due to enormous heaps of the meat or pulp of the coconut being outside the establishments of the various exporters. Many of these firms are subsidized by soap manufacturers who buy the fats and oils extracted from the very important product of the Pacific.

As one walks from the wharf through the town one notices the large buildings of the various big stores that supply the natives with European clothing and food in exchange for copra. Still more interesting is the variety of races and colour. One sees the South Pacific native, almost black, of a race akin to the Papuans, and whose fuzzy hair is trained straight up from his head like an exaggerated cockscomb and is decorated with one or more brightly coloured hibiscus flowers. There is his brother who has joined the Fijian defence force and who wears a white sola or skirt with a belt and buckle and a smart uniform jacket with brightly polished buttons; this he never omits to put on at night. Also one sees many Indians, range from those of low caste in the unpressing Sikh policeman who employs with full turban, black beard and highly waxed moustache directs the traffic from a raised dais

[illegible] demand of the English [illegible] the syllabus of studies [illegible] Medicine [illegible] Surgery Medicine [illegible] posted in small groups [illegible] Obstetrics and they do great [illegible] Usually they are [illegible] Dispensary [illegible] who visits their [illegible] students are taught by the [illegible] Hospital and in other medical [illegible] a collection of medical [illegible] books and thought than [illegible] than any [illegible] taught by the students [illegible] subject. Although [illegible] in the School [illegible] the rest of [illegible] Inter-Ward [illegible] with the high [illegible] the [illegible] the [illegible] the health [illegible] the [illegible] the [illegible] the

[illegible] and pa[illegible] [illegible] Well [illegible] [illegible] [illegible]

[illegible] Cannon Island by [illegible] the end of the last [illegible] been in doubt. [illegible] possession and as Cannon Island [illegible] expedition [illegible] the American [illegible] the U.S. Vessel [illegible] the same time the British [illegible] a plague [illegible] on the island [illegible] and [illegible] British [illegible] the [illegible] Wilking along [illegible] and by digging [illegible] eggs. When the [illegible] the male in the [illegible] She digs a [illegible] back flippers and lays therein [illegible] carefully smoothing down [illegible] false nests [illegible] from the spot [illegible] to keep away the intruding [illegible] works the eggs [illegible] to [illegible] the parent journey out to the [illegible] and only a few survive in grass [illegible] the size of a ping pong ball [illegible] the little [illegible] of the [illegible] by the [illegible] always makes [illegible] back and [illegible] flippers [illegible] and [illegible] the [illegible] and [illegible] the [illegible] Along [illegible] I swam [illegible] well under water [illegible] had been transparent [illegible] and highly coloured tropical [illegible] blue fish red fish fish striped [illegible]

[illegible] if new there was little [illegible] [illegible] and I remained [illegible] [illegible] [illegible]

tho is [illegible] pulling through the instrument [illegible] told me that then [illegible] is Derby Day and that the result [illegible] was flashed to the [illegible] before the runner had [illegible] left [illegible] It is pleasant [illegible] the [illegible] tennis court. There is also a fully equipped surgery [illegible] skilled doctor.

On [illegible] Christmas Island [illegible] there are medical work [illegible] this island [illegible] with the healthy [illegible] Tahitians. The upper plantation [illegible] is reared in [illegible] and the [illegible] Tahiti [illegible] particularly [illegible] and [illegible] the health of the [illegible] in every functions. The [illegible] are entirely [illegible] than they had [illegible] Tahiti [illegible] especially [illegible] and this [illegible] commission [illegible] Tahiti.

Mahden and Starbuck Islands are [illegible] These islands are [illegible] and uninhabited [illegible] Service [illegible] they are [illegible] for phosphate and the company has [illegible] of their land [illegible] boats and property even to the [illegible] in the Tinks.

A very different state of affairs exists in the [illegible] Ocean Island and Nauru, for both are rich [illegible] of phosphate, an essential ingredient in various fertilizers. The chemical constitution of phosphate itself is doubtful, as is its actual mode of formation. These phosphate islands have been described as everlasting and eternal monuments to the mustard activities of the sons of lords, for that is exactly what they are. The bird-droppings settle on the coral of the island and then the whole island settles behind the waves and rises again many years later. During its time under water the bird-excrement has undergone a mysterious change into phosphate which has to be dissolved from the interstices in the coral. Both Ocean Island and Nauru are best places to day and the natives of these islands are healthy, having leased their land for its underlying phosphate to various syndicates. The inhabitants of Ocean Island are a race of their own and are known as Banabans. The health of the natives on these commercialized islands is very well looked after by the phosphate companies, who provide hospitals and doctors for staff. In addition to these facilities there are establishments of the Colonial Medical Service to care for the native islanders. At night when one motors through the phosphate fields it is weird to see the scraggy coral skeleton standing like sentinels, white and immobile in the brilliant tropical moonlight.

And so we come to the end of the tour. It is hoped that these notes may have afforded the reader some idea of the Pacific Islands as they really are and not as described by imaginative authors. I have not dealt at length with the medical work and the anthropological researches that are being carried out among them and among their peoples, but it will be realized how vast is the territory still unexplored. In these notes I have not attempted to describe the social side of the cruise of H.M.S. *Wellington* or the gracious welcome and great kindness extended to her complement at all the places we visited.

MINOR MALADIES OF WRNS

By [illegible] Lieutenant V. Genevieve Rewcastle [illegible]
Medical Superintendent to W.R.N.S.

[illegible] paper is based on this [illegible] paper to medical and [illegible] women in civilian life, but in general [illegible] which have been commonest among Women [illegible] Women's Royal Naval Service in time of war.

Medical [illegible] spring, time on the health of the W.R.N.S. [illegible] explanation is not that the incidence of sickness has [illegible] Experienced observers have confirmed this. Doubtless the [illegible] Entrance examination, candidates who are not Grade I are [illegible] I feel that the care that is taken to [illegible] the W.R.N.S. is probably primarily responsible for [illegible] well in every large community.

[illegible] experience [illegible] in my experience [illegible] and [illegible] in both.

Foot troubles are [illegible] among recruits and [illegible] occasionally [illegible] those who have [illegible] change after [illegible] Service shoe [illegible] and painful experience. [illegible] the experience of [illegible] rule.

While [illegible] candidates who have [illegible] opinion that Medical Officers attached to W.R.N.S. Training Depots [illegible] carotid [illegible] and [illegible] there is a reasonable prospect of these [illegible] being [illegible] and congestion. The [illegible] which are [illegible] and domestic [illegible] have [illegible] number [illegible] general [illegible] women [illegible] in the Central Depot [illegible]

Gynæcologically uncomfortable feel [illegible] young girl [illegible] well [illegible] particularly those who [illegible] have thus been [illegible] sign [illegible] strain.

From the gentle discipline of the W.R.N.S. is not unnecessarily [illegible] to a woman of middle age and [illegible] long hours of [illegible] may have serious repercussions. [illegible] Chiropody Service for Wrens is [illegible] and [illegible] that the W.R.N.S. Sick Bay [illegible] Nursing Member [illegible] chiropodist is [illegible] under the direction of the Medical Officer.

Gastro-hepatic complaints have [illegible] common. There is [illegible] always the [illegible] dishes which are too [illegible] regularly [illegible] in any extent [illegible]

[illegible] mainly [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] WRNS [illegible]

[illegible] WRNS [illegible]

[illegible] WRNS [illegible]

[illegible] Medical Officer [illegible] Medical Officer [illegible] Quarantine for isolation and treatment [illegible] Immobile Women in some into Sick Quarters [illegible] Form B 25 and have treatment at their [illegible] expense [illegible] result that cure takes a great deal longer [illegible] Public Health Authorities should be asked [illegible] cleansing and disinfection of the homes [illegible] under the Naval Discipline Act it might be an [illegible] explicit ways and means of persuading them to come [illegible] Sick Quarters [illegible]

ABDOMINAL AORTIC ANEURYSMS WITH REPORT OF A CASE MET WITH IN A HOSPITAL SHIP

BY SURGEON-LIEUTENANT-COMMANDER GORDON UNGLEY, R.N.V.R.

AND

SURGEON-LIEUTENANT-COMMANDER C. ASHLEY CLARKE, R.N.V.R.

A CASE of abdominal aortic aneurysm met with in a Hospital Ship is related together with a few of the salient features of this condition.

CASE REPORT.

[illegible]

[illegible]

[illegible] Abdominal [illegible] 16 cases only [illegible] internal. Other [illegible] Brym [illegible] being in men. Of [illegible] abdominal.

[illegible] Sciatica is the most [illegible] unilateral. Either [illegible] Pain [illegible] has been [illegible] Sciatica [illegible] Chronic [illegible] Sciatica [illegible] Pain [illegible] Pain in the abdominal [illegible] Pain [illegible] spinal [illegible] Pain [illegible] causes pain [illegible] Pain [illegible] coughing [illegible] these

[illegible] Colic [illegible] many [illegible] necessitous [illegible] the colic [illegible] pared [illegible] Other [illegible] incem [illegible] uterine [illegible] bifurcation [illegible]

Symptoms [illegible] the pain [illegible] Pain [illegible] Pain [illegible]

[illegible]

Rupture of the [illegible]—[illegible] Rupture of the [illegible] for the [illegible]

Fracture of the [illegible]—[illegible] major [illegible] by Mitchell [illegible] reduction [illegible] cause [illegible] upon the [illegible] obstruction [illegible] the kidney.

(2) *Injuries [illegible]*—[illegible] ference with [illegible] Jenning.

(3) *Injuries [illegible]*—[illegible] results in [illegible] vertebrae [illegible] is less [illegible] pressure [illegible] X-ray [illegible] by [illegible] method [illegible] permanent.

Rupture of the [illegible]—[illegible] retroperitoneally [illegible] mediastinum [illegible]

(4) *Injuries of the [illegible]*—[illegible] permanent [illegible] ulcer and is equally [illegible]

[illegible] The swelling [illegible] becomes [illegible] pressure of [illegible] causes [illegible]

[illegible] Occasionally [illegible] the [illegible] secondary pressure effects [illegible] [illegible] Thus pressure [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] The prognosis of abdominal aortic aneurysm [illegible] spontaneous cure has [illegible] Surgery is the only hope of [illegible] Nevertheless [illegible] by surgery [illegible] in this sphere that [illegible] cases not treated [illegible] (Herrman 7 9) and the [illegible] (Herrman 9 6) [illegible] can greatly [illegible] [illegible] years [illegible] (Herrman 9 6) and [illegible] years [illegible] period one which [illegible] is three years [illegible] improved [illegible]

[illegible] [illegible] the walls of [illegible] dissected. This [illegible] of the sac [illegible] aneurysms which [illegible] in the size [illegible] large [illegible] the left ball [illegible] stomach [illegible] practice [illegible] the [illegible] supply of [illegible] this [illegible] literature [illegible]

[illegible] the purpose [illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

are kicks to [illegible] the surface area of the ether. (Any volatile anæsthetic agent may be [illegible] the production model is exhibited for ether.) Projecting from the [illegible] a series of fins or baffles. These fulfil a double purpose. In create [illegible] in the air drawn over the surface of the ether and so secure its [illegible] admixture with the ether vapour, and in convey heat from the crystal [illegible] in the vaporisation of the ether. In this latter connection it [illegible] appreciate that heat is needed to convert any substance from the liquid to the gaseous state. If heat is not provided externally it will be [illegible] from the liquid itself with a resultant fall in temperature. In ether [illegible] this fall in temperature is undesirable. It is necessary to refer briefly to the physical laws governing the vaporisation of liquids.

The concentration of vapour above the surface of a liquid depends on the temperature of the liquid. The concentration is highest at the boiling point of the liquid and lowest at its freezing point. The vapour concentrations for ether at various temperatures expressed as percentages of ether vapour in air are as follows: 10 per cent. at −17° C., 25 per cent. at 0° C., 50 per cent. at 17° C. (room temperature), 100 per cent. at 34° C. (boiling point of ether). It follows that the fall in temperature produced by the evaporation of ether without the external application of heat will result in a lowering of the concentration of the vapour above the surface of the ether. This is the common fault found in other ether vaporisers. If however the temperature of the ether can be kept constant, the concentration of the vapour above its surface will also remain constant. It is then a simple matter to obtain a predetermined percentage of ether vapour in air by regulating the amount of air flowing over the surface of the ether. To keep the ether temperature constant some form of thermostatic control is required. Practical considerations and the risk of explosion forbid the use of an electrical thermostat, and so other means have been used.

(2) *The Crystostat.*—It is well known that if heat is added to ice from a vessel containing melting ice, the temperature of the ice-water mixture does not change. There is an increase in the amount of water if heat is added, or of ice if heat is taken away, in each case at the expense of the other phase. Any alteration of heat content merely alters the physical state but not the temperature of the mixture. The same holds good for any other crystalline substance at its melting point. If heat is added to a mixture of the substance the temperature will rise until the melting point is reached. No further rise in temperature will take place until the whole of the substance is melted. Similarly heat can be taken from the molten substance and no fall in temperature below the melting point will take place until the whole has crystallized.

This is the principle on which the crystostat works. It consists of two chambers with lagged walls to increase the conduction of heat. The outer is a water chamber into which hot water is poured as a convenient means of applying heat to the chamber which surrounds it. This second chamber is filled with calcium chloride which melts at 30° C. which it will do until all the calcium chloride is molten. The second chamber is in contact with the vaporising chamber and so the temperature of the ether in the chamber will also be raised to 30° C. The calcium chloride acts as a heat

[illegible] taken for the operation and the [illegible] and of the cylinder [illegible] of the portable apparatus [illegible] the mixer chamber. The [illegible] there is an extra tube [illegible] the vaporising chamber [illegible] the water in the mixer. In order [illegible] that the [illegible] upon these the [illegible] instant.

Vaporising Chamber.—Air is drawn through the apparatus by the [illegible] lungs. It is admitted through an inspiratory valve and led [illegible] Any proportion of this air can be diverted through the [illegible] under by means of the mixing valve. The air-ether vapour [illegible] the vaporising chamber is again led to the mixing valve [illegible] with the rest of the inspired air which has not passed [illegible] the vaporising chamber. The percentage of ether vapour in air [illegible] then stream in the calibrated scale above the mixing valve [illegible] The mixture is delivered to the patient through a corrugated [illegible] tube. The mask connection contains both an inspira[illegible] [illegible] There is no rebreathing into the apparatus [illegible] gas passing through the expiratory valve [illegible] and in the apparatus which are not essential [illegible] The [illegible] connection for a gas cylinder. This can be [illegible] the [illegible] gas bypasses the vaporising chamber and the mixing valve. Since this implies part of the inspired air it makes no alteration [illegible] the percentage of ether vapour leaving the apparatus. The second [illegible] pipe leaded connection lying on the outlet of the apparatus. It is [illegible] a rebreathing bag, nor can it be used as such. Its action is primarily as a respiratory indicator. It may also be used for inflating the patient with air-ether vapour mixture or any gas which is run in through the cylinder connection.

Clinical Performance.

Induction of Anæsthesia.—It is not intended nor recommended that this apparatus should be used for the induction of anæsthesia, though it provides a far smoother and easier induction with ether than the open mask method. Anæsthesia will normally be induced by one of the usual agents. The method of changing to the vaporiser following the more common of these is described below.

(1) *Following Pentothal.*—The dose of pentothal to be used for induction should be decided beforehand, taking into consideration the robustness of the patient. In a reasonably robust natural rating this will normally be between 0·5 grm. and 1·0 grm. Whatever dose is decided upon should be given quickly. This will cause a temporary respiratory depression. During this respiratory depression the mask is applied to the face with the expiratory valve screwed down. The control lever is set to 10 per cent. and by means of a spring loaded bag an attempt is made to inflate the patient's lungs rhythmically with this mixture. Should a degree of laryngeal spasm ensue the rhythmical

[illegible]

(2) *[illegible]* [illegible] This [illegible] method [illegible] frequently [illegible] ing is [illegible] [illegible] per cent [illegible] and this can be quickened or slackened as the [illegible] of the patient [illegible]

(3) *[illegible] with Ether.* This is the [illegible] to be employed for both patient and anæsthetist [illegible] capnism [illegible] easily preferable to [illegible] It is also [illegible] whereas about thirty minutes [illegible] surgical [illegible] with the open mask method the same depth [illegible] can be [illegible] in ten minutes with the capnism [illegible] as full as [illegible] gradually [illegible] rhythmic [illegible] to the spring-loaded bag. As the [illegible] semitism [illegible] concentration [illegible] is equally as the patient will [illegible]

Maintenance of Anæsthesia.—When the patient has [illegible] required depth of anæsthesia it will be found desirable to [illegible] vapour concentration and in most cases 5 per cent will be [illegible] minimum anæsthesia of the depth. It must be remembered that [illegible] is first dissolved in the liquid substance of the brain. It is then [illegible] over the fatty tissues of the whole body. During this period [illegible] ether must be given or the patient will tend to come round. The [illegible] tion process takes from twenty to thirty minutes and it is during this [illegible] the ether percentage may be reduced to 5 per cent. At this point [illegible] is taken in at a slightly greater rate than it is excreted and therefore [illegible] fore, be a very slight deepening of anæsthesia through the [illegible] of the anæsthetic.

The apparatus is as suitable for endotracheal anæsthesia as for [illegible] mask. But it is important to use an endotracheal tube of adequate [illegible] if the tube is too small and the patient is forced to breathe [illegible] as through it, the chief advantage of the apparatus—giving [illegible] in a known concentration—is lost.

One of the delights of this apparatus is the way in which [illegible] inexperienced anæsthetist to give a smooth anæsthesia. The [illegible] ether concentration never varies except by the will of the anæsthetist. The unskilled can keep a patient light in Guedel's first plane with ease, always provided that the airway is unobstructed and that there are no leaks around the face mask. Nor need it be despised by the skilled anæsthetist

[illegible] only [illegible] with its position [illegible] of anæsthetic mixture [illegible] skilled hands that his patient will be given the [illegible] other necessary for the operation to be performed

There [illegible] occasions on which a medical officer being single-handed [illegible] surgeon and anæsthetist [illegible] On these occasions the [illegible] in open mask by a Sick Berth rating or a fellow [illegible] has been a cause of anxiety Here the [illegible] reliable Because once anæsthesia has been induced [illegible] shown how to hold the mask on the face and the jaw [illegible] give almost his whole attention to the operation [illegible] the anæsthetist being limited to occasional adjustments [illegible] This is no exaggeration for I have seen students with [illegible] very reliable anæsthetics with only such [illegible]

[illegible] R M [illegible] to quote [illegible] Feb 19 1911 and in [illegible] October [illegible] the preparation of these notes

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A NAVAL HOSPITAL SHIP IN THE EAST

BY SURGEON CAPTAIN O D BROWNFIELD R N

[illegible] are compiled from the experience gained from conv[illegible] HMHS [illegible] and it is hoped that they may [illegible] and hints, out a hospital ship at some future date [illegible] is justifiable is one treats an accepted fact and [illegible] appears in this short article is offered in that [illegible] Unless [illegible] is at [illegible] no naval hospital ship was employed in Eastern [illegible] the tropics for any length of time during the last war HMHS [illegible] for a short time in the China station but that was during [illegible] time The function of a naval hospital ship is primarily [illegible] hospital in connection with some fleet or naval base [illegible] purpose her medical officers are specialists and are [illegible] facilities for laboratory and research work She is in fact [illegible] small general hospital which is contained in a [illegible] supposed to a building ashore This point is stressed in view [illegible] Army hospital ships are merely large carriers [illegible] primary function is to transport large numbers of sick [illegible] are unsuitable for such purposes and to pool a naval hospital [illegible] appears to be an uneconomic proceeding and a waste of specialist [illegible] talent Work of that description does not require staff such as [illegible] appointed to a naval hospital ship

CHOICE OF SHIP

Presumably long before the outbreak of hostilities occurs certain ships are earmarked to be converted if required into naval hospital ships To

[illegible] the excellent medical facilities enjoyed [illegible] on board a ship [illegible] supplies [illegible] hospital ship is [illegible] the subject of this article, but the experience gained from commandering and transforming such a ship has produced points which might well be of use should such a choice of ship have to be made at some future date. A naval hospital ship should be capable of serving in and proceeding to any part of the world in which she may be required. If however it is anticipated that she will serve in home waters in the North without having her oil so as to render her only of use in those waters she might easily be more suitable for such work than a commission in the tropics and the same applies to a ship which it is anticipated will primarily function in the East. The following may serve as illustrations of what is meant by this. In a ship which for long periods will be in a cool or cold temperature and has at times to steam for comparatively short distances it will not be necessary to refuel her at frequent intervals and in the event of the ship being a coal burning one it is no real hardship to close all ventilation during coaling; on the other hand when on an Eastern station a ship is serving a large area she often steams 1 000 to 1 500 miles at a stretch and fuelling is a far more frequent occurrence. When the temperature of the wards is constantly 96° to 98° F. with every possible means of ventilation working at highest pressure it is a real hardship for both patients and nursing staff to have to close all natural sources of ventilation and stop all blowers for twelve to twenty four hours in an effort to prevent everything becoming covered with coal dust. It is a vain attempt as the wards have invariably to be scrubbed out and most of the linen changed after coaling ship. In this ship it was necessary at one period to coal three times in fourteen days a procedure which was very trying to everyone on board and made the efforts of the fortunate people serving in oil-burning ships.

Water and ice are two very essential factors in the maintenance of a hospital ship and here again in home waters water supplies are usually easy of access and ice is not the essential that it is in tropical regions. It would therefore seem to be an important point in choosing a hospital ship for service in the tropics where she may have to be self supporting that she should be an oil burner capable of making some ice and distilling enough water to augment her initial supply even if she cannot distil enough to keep pace with the daily consumption. Practical experience has shown that a coal burning ship incapable of making ice and only able to distil a small amount of water is at a great disadvantage in tropical waters.

The Embarkation of Wounded and Sick

A ship lying at a base serving as a hospital will probably seldom be called upon to admit very large numbers of patients at a time. Her routine will be a steady stream of daily admissions and discharges. In the East however the ship is frequently called upon to steam for several days to some spot where fighting has occurred where sudden sickness has broken out or where army wounded have to be evacuated. In the last case it is usually a matter of being told to fill up as quickly as possible as [illegible] are frequent and we want your billet for a store-ship. Speed therefore is an essential factor in embarkation and this has a great advantage over several

more modern [illegible] hospital ships in being [illegible] embarkation [illegible]
Take an [illegible] 280 cases Of these say 80 in [illegible] cases and [illegible]
walking [illegible] stretcher cases have to be hoisted one by one in a [illegible]
on to an upper deck and then distributed to various wards a procedure
which takes considerable time *Data* in normal times carries 1 800 deck
passengers who are accommodated on the main deck in two large areas one
forward and one aft connected by wide passages on either side of the engine-
room casings These two large areas are the two main wards surgical sixty
bed forward and medical forty two beds aft Four large ports fitted with
platforms on the ship's side lead direct to these wards When the ship is
[illegible] from a dock or jetty a gangway is run up to one of these plat
[illegible] and stretchers are carried direct into the ward When embarking
[illegible] lighter or boat which has a few feet freeboard is sufficiently high
[illegible] the lighter for stretchers to be man handled direct on to the platform
[illegible] ward while from the ordinary service motor boat or cutter a
[illegible] fitted with four strops worked by a winch and derrick one strap for
[illegible] handle of the stretcher is used to raise the patient a few feet from the
[illegible] the platform The saving in time produced by this method of
[illegible] when compared with methods employed in some other ships
[illegible] if possible similar parts with platforms being con
[illegible] give direct access to the main wards in all hospital ships
[illegible] adopted in *Data* to control a mass embarkation is a modi
[illegible] the procedure described by Lieutenant Colonel Gibson of
H M H S *Britain* in his brochure on hospital ships

Vehicles pull up either ashore at the bottom of the gangway or just in
board of the lighter platform At these tables sit the admitting medical
officers two in number and two recorders One of these medical officers
deals with surgical cases and one with medical There are also stretcher
[illegible] provided to carry the cases when the outside bearers cannot accom
pany their cases Each medical officer has a "theatre plan" of his beds
and as each case passes him the patient's bed is "booked" for him on the
plan he is given a label with the number of his bed and the recorder notes
the name official number &c and the number of the bed to which he is going The Sisters and ward staff are on duty in their wards as each
patient arrives he is placed on his allotted bed and the stretcher party moves
on to collect another case Should the Sister of the ward consider the bed
allotted unsuitable she can alter the number but must let the box
office know immediately By this method it is possible to check up at any
moment of the embarkation exactly what beds are occupied and one can
put one finger immediately on any patient who has been admitted When
this method is working smoothly as it should do with very little rehearsal
it is a great mistake for any onlooker such as a Principal Medical Officer
to take any active steps to rectify what may appear to be a mistake Inter
ference at the time is liable to muddle up the whole exercise and it is far
better to make notes for a future occasion than to interrupt the steady flow
of patients entering the ship Frequently one finds there is a cause for what
appears to be an error and interference only brings down coals of fire on one's
own head Once the team has started as far as possible no one outside it
should offer any suggestions which may cause a slowing up or alteration in

the original plan and orders. Using this method of embarkation *Vita* was able to enter a harbour at 1500, secure alongside, fill to capacity from an ambulance train and be clear of the harbour by 1815 hours.

The transport of patients to and from the ship presents a picture in the East which differs from one's former ideas. A hospital ship serving a fleet or naval base does not and is not expected to provide a boat to fetch fresh cases or deliver her discharges, but frequently on detached service requests that patients should be admitted are received from merchant ships, auxiliary vessels or from military sources where there is no boat available and the hospital ship not only is expected to but has to supply a boat to fetch the cases. It is therefore essential that a hospital ship on detached service should be supplied with at least one reliable motor boat capable of taking a stretcher case, and of towing another boat containing other cases. A merchant service coal burning ship carrying passengers and some cargo is in all probability not provided with a power boat; she carries no personnel with the slightest experience of motor boats and she does not in the ordinary course of events use her own boats to transport either passengers or cargo. There is no provision made for manning a motor boat comparable with naval conditions in that there are no petty officers, leading seamen &c. There are the deck officers, the engine room officers and then nothing but the native crew. As a result a motor boat has to have a deck officer as coxswain and an engineer officer to look after the engine. In a ship with a limited number of officers the use of a motor boat is naturally not a popular one, and it cannot be said that the boat itself gets a very fair deal. Provision should be made for this, and the Company from whom the ship is chartered should be required to provide the necessary personnel for the running and maintenance of reliable motor boats.

Victualling

The feeding of patients is not an easy matter in a ship in which the supply of food, cooking &c. is in the hands of Chinese headed by a butler of that nationality. This individual in all probability has a very limited knowledge of the English language and his cooks have none. The butler may be used to providing menus for a limited number of passengers who are on board for a short time and his repertoire of menus need not be at all extensive. It is therefore quite easy to visualize the difficulty of the unfortunate nursing Sister trying to explain the mysteries of the various dishes she requires for her patients on low and extra diets to a gentleman who readily agrees to provide and do all that she suggests, but at the same time has not hoisted in one-tenth of what is required of him. One can also imagine what that Sister feels and is sometimes even known to say when the results of her labours are produced at meal times. Galley hands armed with a list of what they are to fetch from the galley are confronted when they make their demand by a Chinese cook speaking and reading no English. The success which attends these visits to the galley has always proved a mystery. The difficulties would be solved to a very large extent if the ship carried a British steward to whom orders could be given and who would then be able to explain them to his Chinese staff.

Accommodation of Patients

[illegible] the absence and [illegible] the present [illegible] [illegible] [illegible]

the [illegible] [illegible] fish in [illegible] [illegible]

[illegible]

In which [illegible] in the pacific [illegible] hop render her immune from [illegible] which the personnel of this ship [illegible] with all lights showing the illuminated [illegible] make a hospital ship a readily picked [illegible] would be a better policy to steam as a lighted [illegible] in this trade but when such a ship [illegible] subject to air attacks she must [illegible] ship taking her chance of being [illegible] of their mechanage. Apparently [illegible] included in the specification [illegible] ship and [illegible] a fleet and [illegible] in any effective manner [illegible] ship into darkness a proceeding [illegible] small and patrons. Special attention should [illegible] adequate means of darkening ship [illegible] time interferes as little as possible [illegible] and messes. Merely to black up all [illegible] ture of the inside of the ship in a very [illegible] manner.

Accommodation of Sick

It is with some diffidence that [illegible] the impression of criticism which [illegible] unite in it but after [illegible] *Karapara Simeisishi* and *D[illegible]* (M[illegible]) and *O[illegible]* possibly be used as a comparison [illegible] liners of the class) it seems only [illegible] is a happy ship and the personnel [illegible] in producing this happiness [illegible] of a rented hospital in the [illegible] with their [illegible] comparison but where a high [illegible] a mistake not to make use of [illegible] might be given to the living [illegible] missions in the tropics. On [illegible] kept and by sufficient [illegible] coldest climate but kept [illegible] and in the barbed in perpetuity they [illegible] to make people rather [illegible] squeezed in the [illegible] and fitted with necessities of comfort [illegible] cannot be carried in [illegible] in her but it could have been [illegible] or at least rabbits and [illegible] the proportion [illegible] and [illegible] and seals.

It is [illegible] feels a hold [illegible] and Mr. [illegible]

Officers [illegible] for a whole commission with only a small glassed in portion [illegible] is the sole sitting room in the ship. For the efficiency of the ship it is essential that Sisters should have some privacy other than a cabin measuring 7 ft. by 7 ft. (double banked in one case) to which to retire and that Medical Officers should be able to discuss matters which may not always be a suitable subject of conversation for the lady members of the mess. These incidents of life are perhaps more essential on a foreign station where an [illegible] is given where the climatic conditions tend to make individuals rather more irritable than perhaps they would be in Harley Street, Hereford or Hastar and it is felt that they bear a very marked relation to the efficiency of the team.

It is regretted that these few notes appear to point only to the drawbacks of the ship in which they have been compiled but it is hoped they will be accepted in the spirit in which they are offered, namely, as a possible slight help to those whose duty it may be to choose a ship to be converted into a hospital ship for service in the tropics at some future date.

OUTBREAK OF MALARIA IN A CRUISER AT WAR

By Surgeon Lieutenant-Commander J. Vincent Smith, R.N.

During late April and early May 1941 the personnel of a cruiser (some [illegible] and men) were highly subjected to the attacks of anopheline mosquitoes in the height of a malarial season. The Medical Team had little [illegible] but dealt with fatalistic anticipation the expected outbreak.[1] After [illegible] and consultation with local authorities prophylactic [illegible] was generally given because in the first place its value is doubtful [illegible] prophylaxis some attacks and mask others. We were told that the local [illegible] malaria was not usually virulent. This proved later to be yet another [illegible] enemies. Secondly it was thought better to reserve [illegible] prophylaxis for the treatment of such cases is might arise. A certain [illegible] was advised to take 10 gr. daily; these were (i) a young officer [illegible] who had recently been acutely ill with chest complaints, (ii) the Sick Berth Staff [illegible] ratings only—whom it would probably be necessary to keep in duty as long as possible, and (iii) a party of Royal Marines to whom a well meaning neighbour ashore gave preliminary doses. It was interesting to note that one of these was among the earliest recognized cases, and none of the above I think maintained the prophylaxis for very long. Further reference to this subject will be made when the relapses are discussed.

The first urgent reported sick about May 8 just as the air temperature was beginning to remind us of the locality's grim reputation. At the time flies had already brought us a minor outbreak of febrile diarrhoea of the "Gippy Tummy" variety.

The malarial symptoms were very like those of sandfly fever—headache, pain behind the eyes and in the back and limbs, high fever, injection of

[1] Almost coincidental with this was the disappointing (?) mosquitoes came for us. Butter oil and fitigons were apparently effective and so were joss sticks.

the conjunctiva. [illegible] this point is dis[illegible] No enlarged spleens [illegible] epistaxis occurred [illegible] vomiting was common and [illegible] appetite variable. The [illegible] temperature on reporting [illegible] the pulse and [illegible] above 100.

In the beginning no [illegible] of annoyance and frustration [illegible] subsequent experience has [illegible] ing of films is more difficult in [illegible] it is important that the [illegible] the stain should be freshly [illegible] times recommended. [illegible] up to one [illegible] to fins and high temperature [illegible] all his films a final wash with [illegible] being inverted over the nozzle [illegible] precipitate.

The first parasites needed [illegible] been ill for some days. They were [illegible] although there were many future [illegible] and differentiating the plasmodia [illegible] easy to find in first attacks and in most of the patients only one slide [illegible] made. It takes considerable experience to differentiate the ring forms [illegible] certainty and the beginner has to rely on finding enlarged red cells [illegible] Schüffner's dots and amœboid parasite in order to call the infection [illegible] benign tertian one. Even then the diagnosis is not necessarily correct. In many such cases the course of the fever was in variance with the [illegible] found there were in fact double and mixed infections—not once [illegible] primary attacks was there a typical quartan or tertian chart. The nearest approach to it was in a Midshipman who gave a history of [illegible] feeling [illegible] on alternate days for a week. His blood contained various forms of *P. [illegible]* but from the first the fever was quartan. Interesting differences [illegible] in the relapses will be mentioned below.

By a most welcome coincidence the ship moved from the malarious district to a more healthy one nearby where she remained till the end of the month. The epidemic waxed quite nearly all cases occurring within the normal one to three weeks after the period of infection. Very few primary attacks were recorded after that time. In the early stages a Sick List of 35 seemed heavy, after our usual single figures, but this total vanished into the class of the "good old days" as seventy, eighty and even ninety names were duly presented to the Captain. We never reached the 100 up hereafter and the curve fell nearly as steeply as it had risen.

Accommodation. The ship was at anchor with steam up and all hatches maintained day and night. The day temperatures varied around 100° F. with little fall at night, but the wet bulb was low. Scuttles were closed at night. There were only four cots in the Sick Bay, three more places were made by using stretchers and the top of the bath, only men needing constant attention were put in the Bay. The first station was not in old reefer mess space, now a locker flat above the Sick Bay, here were 12 sloping bulkheads and

deck space for about half a dozen stretchers or camp beds. By [illegible] if the Fever Lieutenant this was always used when there was a number of cases. The forward part of the quarter was next used—starboard side for Chiefs and P.O.s, and port side for other ranks and marine [illegible] Health and in addition to these, when it was seen that the outbreak was going [illegible] large one, space was cleared on the starboard side of the boat deck for [illegible] of each cot and running on the whaler. Here, under a single awning on the deck, the remainder of the patients were housed. Known as the Convalescent Camp, it had the most delightful images of being not for [illegible] the heads—and if allowing a view of nearly all the patients there [illegible] the best one could do but was terribly hot in the daytime and [illegible] Had a night, though dimmed a trifle, could then be used. Some [illegible] lying on the deck and the pitching and swept gaudfully [illegible] the awning, and cooled the patients but often in my anxiety [illegible] Air exhaust ventilation shafts added in the absence of good [illegible] by means of a hand [illegible]. The [illegible] easier to bear than in the afternoon glare which [illegible] The men lay on service camp beds which had [illegible] mattresses. Most of them had [illegible] supply of cool water, others made do [illegible] which added [illegible] if dissolute atmosphere. There [illegible] messrooms for washing, facilities and such food as [illegible] and preferred, muddling to the heads to the publicity by [illegible] night. Bed pans and urinals. The Sick Berth Staff [illegible] taking, in the case, taking temperatures &c. but [illegible] help a great deal and at night we employed [illegible] the Landsmen, rather than use of anything was urgently [illegible] down to the mess [illegible] each patient name, day, urine notes, order [illegible] Hospital. Thus the Surgeon Lieutenant attended to the [illegible] he also reported to me each afternoon [illegible] had been admitted to the Sick List. The majority [illegible]

We [illegible] a Petty Officer ‡ miles away, he opened [illegible] ward [illegible] Hospital and housed [illegible] of our patients [illegible] a Sick Berth Attendant, a Cook and [illegible] there and the conditions were so much cooler and more [illegible] decks and much neglected the small [illegible] manufactured and as it happened [illegible]

Treatment.—After [illegible] to establish the diagnosis before starting [illegible] however than a man might [illegible] treatment was started [illegible] time for his part [illegible] the fever with intermittent [illegible] with perhaps [illegible] carried in full short of what [illegible] and [illegible] he was to be turned in after

[illegible] 100° I [illegible] 1 2 gr. In practice [illegible] effective [illegible] his on the granul[illegible] [illegible] All the close[illegible] [illegible] impression and in[illegible] [illegible] formed [illegible] [illegible] bulbous [illegible] [illegible] bulbous [illegible] [illegible] bulbous

[illegible] He was [illegible]
[illegible] time was [illegible]
[illegible] [illegible] quiet [illegible]

[illegible] but [illegible]
[illegible] 2 [illegible] [illegible]

82

[illegible]

[illegible] He [illegible]
[illegible] small [illegible]

[illegible] [illegible] [illegible] [

[illegible]

[illegible] the [illegible] settled [illegible] been [illegible] days be [illegible] knee of an outbreak has [illegible] have had [illegible] and should perhaps be [illegible] stage. [illegible] half an hour before [illegible] ption. But [illegible] all these measures [illegible] Death should [illegible] usually occur in first [illegible] and in [illegible] the prostration and [illegible] type [illegible]

No [illegible] was given intravenously in [illegible] the pre [illegible] from chloroform and [illegible] If however [illegible] the slight form of cerebral [illegible] alternative—[illegible] will [illegible] up the scales against the patient.

Other Complications.—Mental affections [illegible] consisted [illegible] in Case I. One young [illegible] into the [illegible] the Commander [illegible] to get 90 days.

It was [illegible] blackwater [illegible]

Lipuria [illegible] which might [illegible] permanent [illegible] not [illegible] have the [illegible] distressing [illegible]

[illegible] noticeable [illegible] Shortness [illegible] blood pressure [illegible] Although [illegible] usually discharged to hospital [illegible] man of [illegible] weak [illegible] breathless and [illegible] complaining. The [illegible] quickly and in a few weeks [illegible]

[illegible] the superior [illegible] were all [illegible] to their [illegible] trained nurse or sister [illegible] And with cynical [illegible] [illegible] In one case one [illegible] refuse to [illegible] the fever has [illegible] day might just [illegible] day until he must [illegible] least [illegible] indifference to their [illegible]

[illegible] secondary [illegible] assisted essentially [illegible] times a day followed [illegible] followed by another [illegible] times. The nurse had been [illegible] July made it difficult [illegible] Once [illegible] while actually in the [illegible] unmistakable good [illegible] with more [illegible] after treatment [illegible] warned in [illegible] whatever policy is [illegible] case [illegible] nose is an [illegible] to stamp out the [illegible]

[illegible] No [illegible] figures can be [illegible] the rate of recurrence [illegible] form. Altogether [illegible] June 30 78 cases [illegible] course of illness [illegible] the parasite was [illegible] suggestive subtertian infection [illegible] In most cases multiple and mixed [illegible] fever and the subtertian element [illegible] These were all primary attacks [illegible] all in them must be [illegible] early August which may [illegible] attack

[illegible] presence of uncertain

[illegible] a high [illegible] Another [illegible] involve [illegible] relapse [illegible]

[illegible] of all [illegible] June [illegible] action [illegible] (late [illegible] [illegible] actually [illegible] only [illegible] member [illegible] [illegible] [illegible]

[illegible] my [illegible] American [illegible] physicians [illegible] produced [illegible]

An [illegible] incidence of [illegible] in the early [illegible] climate [illegible] infection [illegible] to be suffering [illegible] presence of [illegible] known [illegible] was exhibited [illegible] *malariae* was [illegible] *P. vivax* [illegible] with quinine [illegible] being taken [illegible] there was marked [illegible] enough [illegible] quinine, and [illegible] with a mixture of iron and [illegible] were also given. There [illegible] when an irregular fever began again and [illegible] is heard. Parasites were again found in the blood. A [illegible] persisted in spite of quinine and the spleen became markedly [illegible] murmur more noticeable. The red blood cells were [illegible] was higher than they had been, the patient's [illegible] between icterus and *café au lait*. We feared there might be [illegible] case coming to light and he was sent to hospital for [illegible] rejoined us with no new diagnosis. A secondary [illegible] spleen persisted for some time, but there has been no further [illegible]. It must be remembered that malaria is a debilitating illness and [illegible] light up a latent tuberculosis. More [illegible] complications [illegible] such as shrinking corneal ulcer (probably [illegible]) [illegible] hernia. There was also a case [illegible] rejected [illegible] of the lungs [illegible] spontaneous rupture of the spleen.

Referring [illegible] I was glad to learn from A.F.O. 3751/41 [illegible] replace the sterile preparations and phosphate [illegible] is the most readily absorbable form of iron. [illegible] is easier and apparently [illegible] in all the three [illegible] My own patients were [illegible] must be among the least and [illegible] period after the epidemic. With such [illegible] regarded their colour and behaviour properly.

On Prevention of Malaria. [illegible] continuous and with increased [illegible] showing all forms [illegible] directions of *P. falciparum*, but [illegible] ought in the future must be [illegible] *P.* [illegible] parasite early. As the

[illegible] [illegible] [illegible] [

[illegible] dissolution [illegible]

[illegible] are not [illegible] sub-[illegible] divert the attention [illegible]

[illegible] idea of discontinuing [illegible] is a [illegible] supply administration [illegible] effect [illegible] against possible relapse. Minimal [illegible] therapeutically [illegible] the eclipse [illegible] with the conception that [illegible] much [illegible] disposing [illegible] cases of quinine [illegible] the small [illegible] The persistent eclipse in a [illegible] other [illegible] and [illegible] illustrate the [illegible] of [illegible]

I [illegible] medical officers of smaller ships similarly afflicted [illegible] went [illegible] and what measures they adopted for we have [illegible] to [illegible] with each other since the infective period.

I [illegible] of the co-operation of Dr. [illegible] Ashforth [illegible] who opened a ward for fifteen of our patients [illegible] after them himself without [illegible] R.N.V.R. who [illegible] epidemic assisted with the [illegible] cases [illegible] and of Surgeon Lieutenant [illegible] Watt [illegible] R.N.V.R. [illegible] and transient [illegible]

THE TREATMENT OF [illegible] URINARY INFECTIONS

By [illegible] D. P. WALSH, B.N.

[illegible] the terms of the [illegible] chemistry in the [illegible] number [illegible] the primal [illegible] these [illegible] reds to [illegible] ol pyridium [illegible] blue. How[illegible] extreme the [illegible]

Next [illegible] per cent of [illegible] The *B* coli [illegible] of fats in [illegible] the urine [illegible] For [illegible] as the diet [illegible] a distinct [illegible] in mandel[illegible] diet [illegible] followed the [illegible] it does not [illegible] mandelate [illegible] followed [illegible] restricted [illegible] the treatment of [illegible] *S. faecalis* [illegible] out during [illegible] acidity.

But [illegible] non-[illegible] substrate [illegible] the growth [illegible] Boyer [2] [illegible] amide [illegible] published [illegible] they [illegible] picked [illegible] its [illegible] coming [illegible] reduction [illegible] of Boyer [illegible]

[illegible]

[illegible]

[illegible] then Gen[illegible] Specialist [illegible] RN [illegible] ch credit [illegible] for his pioneer work. Many [illegible] in medicine have since appeared, and [illegible] shall [illegible] multitude of reports both clinical and [illegible] sulphanilamide has slowly emerging [illegible]

Sulphanilamide [illegible] of water. When administered orally [illegible] single dose of 3 grm. the blood [illegible] the first hour levels off between [illegible] the fourth hour then slowly [illegible] [9] As its maximum concentration [illegible] and 25 per cent in the [illegible] responsible for the acetylation [illegible] in which approximately 50 per [illegible] [illegible] inactive [10] Contrary [illegible] blood make his the highest [illegible] quantity of the drug [illegible] excretion curve follows [illegible] but with a small time lag [illegible] of sulphanilamide in the urine [illegible] [illegible] [9]

Mode of action.—It is [illegible] that the potency in vivo of this drug is one of bacteriostasis in other words there is determined if the rate of growth of the bacterial cells. In some circumstances small numbers of bacteria may even be killed. The antibacterial effect is brought about by interference with the normal metabolism of the organism. When to a suspension of viable bacteria susceptible to the action of sulphanilamide a sufficient concentration of the drug is added the morphology of the bacteria does not undergo changes for several hours [11] Under similar conditions in the urine *in vitro* multiplication of the bacteria takes place during the first four to six hours [12] In the human body the destruction of the pathogens depends on the bacteriostatic action of the drug and the defence mechanism of the host. There is no evidence that sulphanilamide interferes with the formation of antibodies nor that they stimulate the production of specific immune substances. The failure of sulphanilamide in control in infection is probably explained by the failure of the hosts

[illegible]

[illegible] in the metabolism of micro-organisms [illegible] that the capsule of the [illegible] to the body defence [illegible] it is the oxida-tion [illegible] derivative [illegible] possessing a high [illegible] to damage the [illegible] system of [illegible] that sulphanilamide interferes with the blood enzyme [illegible] which is increased with formation of H_2O_2 a normal product of the metabolism of actively growing bacteria By permitting an accumulation of H_2O in the environment of the cell growth is inhibited Woods [15] has published observations showing that a chemical —para aminobenzoic acid—structurally akin to sulphanilamide is essential for the growth of some bacteria. It is utilized by enzyme activity He suggests that sulphanilamide may be used by the enzyme owing to its similarity in structure thereby depriving the cell of an essential growth factor Since a viable bacterial cell has a complicated enzyme system functioning for the purpose of satisfying its nutritional requirements and the systems differ with each type of bacteria a reasonable explanation is given by this theory why an agent such as sulphanilamide may interfere with the enzyme activities of one type of bacteria whilst another remains unaffected This may well explain in part the specificity which all the sulphonamide compounds exhibit One further instance of this anti enzyme activity is worthy of note owing to its clinical significance An enzyme in the human body known as carbonic anhydrase catalyses the conversion of carbon dioxide into bicarbonate [16] Sulphanilamide inhibits the action of this enzyme by virtue of its free S_2NH_2 group, which is not present in sulphapyridine nor in sulphathiazole In confirmation of this action it is found clinically that acidosis is common during sulphanilamide treatment but does not occur with the other two compounds.

Dosage of sulphanilamide has not yet attained a scientific standard There are many variable factors to contend with such as individual weight absorption of the drug renal function defensive mechanism response Different strains of the same organism vary greatly in their resistance some strains being completely resistant Figures showing the optimum bacteriostatic concentration of free sulphanilamide in the urine have been worked out *in vitro* for each organism but clinical response does not follow a strict relationship to such findings Until a more definite standard can be adopted it is well to err on the side of overdosage aiming at a blood concentration of 3 to 4 mgm per cent and a urine concentration of about 150 mgm per cent This can be achieved in the average person of ten stone by the administration of 3 to 4 grm in twenty four hours combined with a fluid intake of 50 to 60 oz The first and second doses should total 5 to 6 grm to obtain a rapid high blood concentration and four hourly doses should be main-

[illegible] will be [illegible] presence [illegible] will be [illegible] uld [illegible]

[illegible] and [illegible] is [illegible] if [illegible] of [illegible] the [illegible] be [illegible] plas[illegible] has [illegible] of the [illegible] provided [illegible] be expe[illegible] combatin[illegible] spontan[illegible] be regarded [illegible]

The [illegible]

(1) The [illegible] made [illegible] the last [illegible] invidev [illegible] presen[illegible] for calcul[illegible]

(2) [illegible] headache [illegible] with [illegible] dizzin[illegible] The [illegible] pundi[illegible] icine [illegible] is som[illegible] or pr[illegible] an idio[illegible] is advis[illegible] of sulph[illegible] necessi[illegible] dosage *pe*[illegible] sense [illegible] hes m[illegible] sorrowin[illegible] until gre[illegible] and [illegible] made [illegible] done daily [illegible] the numb[illegible] fatal [illegible]

sodium pent[illegible] and toxic [illegible] [illegible] nearly 200 patients [illegible] [illegible] grm and [illegible] A reckly leucoc[illegible] [illegible] cytes fell to 5000 [illegible] using sulphanilamide [illegible] [illegible] [illegible]

[illegible] and inide, though the [illegible] nance lose m[illegible] to its slower excretion. The [illegible] eneral medica[illegible] in genito urinary m[illegible] Sodium sulphapyr[illegible] phen[illegible] ampoules [illegible] per cent solution [illegible] markedly all d[illegible] is rather painful when given intramuscularly [illegible] is buffered by [illegible] lidocaine should be injected first, the needle being left in [illegible] then the sodium sulphapyridine injected through the same needle, and usually a little more of the anesthetic [illegible] the needle is [illegible] Mesupron is slower by the [illegible] for intramuscular therapy is 5 per cent [illegible] sodium. This is satisfactory though [illegible] Mesupron may be used. An intramuscular dose of 0.05 gm per lb body weight [illegible] per cent [illegible] the original dose. [illegible] sulphapyridine [illegible] is usually [illegible] dose. [illegible] given orally, [illegible] the stomach [illegible] Omit is often [illegible] by giving half the dose [illegible] To the best [illegible] Cystosis dental pain 10 [illegible] Mesupron [illegible] enough in a certain number [illegible] demonstrated and the term [illegible] has been possible [illegible] Mesupron [illegible] in the correct [illegible] the diagnosis of sulphonamide [illegible] by [illegible] pic analysis and [illegible] Restrictions of sulphonamide [illegible] Hamburger [illegible] is a [illegible] by the passage of the [illegible] through the renal tubule. [illegible] and may result in [illegible] of the tubules. If the [illegible] placed on a forced fluid intake and [illegible] response catheterization and [illegible] A urinary output of 400 oz. [illegible] and complications which are not avoided by the [illegible] of the fluid intake due to vomiting [illegible] could be combated by the intravenous [illegible] in these cases is purely for its medium [illegible]

[illegible] sulphamide differs [illegible] yl substituted [illegible] is only one [illegible] infections. An [illegible] not to be able [illegible] sulphanilamide [illegible] In the reports [illegible] *B coli B proteus* [illegible] *S. pyogenes* [illegible] In fact [illegible] philosophers [illegible] supplies of [illegible] It is only in recent [illegible] phylococcal [illegible] pyuria [illegible] of the case [illegible] sulphanilamide [illegible] on of the sterile

[illegible] 1935 **120** 798
[illegible] 1936 **1**, 1286

[illegible] 91 **2** 119
[illegible] 2 [illegible]

[illegible] 1939 **41**, 14
[illegible] *Mayo Clin.* Oct. her
[illegible] 1931 Publication by th
[illegible] 1931 **52**, 247
[illegible] 1930 **100** 749
[illegible]
[illegible] 11a 1935
[illegible] 1935
[illegible] *Mayo Clin.* [illegible] 1937 **12**, 361
[illegible] **105**, 591
[illegible] 117 [illegible]

RECURRENT STAPHYLOCOCCAL PERIOSTITIS OF THE TIBIA

[illegible] MONSHIP E. R. SORLEY, R.N.

A series of [illegible] certain acute inflammatory conditions of the leg has led me to believe that there is a clear cut clinical entity which has previously escaped recognition, namely recurrent staphylococcal periostitis of the lower third of the tibia. The condition may be termed recurrent if [illegible] Many of my cases have the advantage [illegible] since I suffered from the illness for [illegible] has induced me to ponder the subject [illegible] darkness [illegible] the [illegible] to make [illegible]

Personal History.—[illegible] 19 [illegible] from [illegible] the lower third [illegible] the skin [illegible] immediately [illegible] immediately [illegible] The skin [illegible] lying [illegible] edema was [illegible] symptoms [illegible] 99 to 100. [illegible] months [illegible] months [illegible] [illegible] (non-[illegible] [illegible] [illegible] [

[illegible] Right [illegible] [illegible] [illegible]

[illegible] ing temperature [illegible] and of [illegible] [illegible] history [illegible] a [illegible] [illegible] chickens [illegible] before although [illegible] there was [illegible] of the skin [illegible] [illegible] the left [illegible] [illegible] and the [illegible] [illegible] [illegible]

[illegible]

[illegible] the [illegible] some [illegible] of [illegible] ness [illegible] can [illegible] and [illegible] this [illegible] an the [illegible] My [illegible] h [illegible] [illegible] [illegible]

[illegible]

RENAL INFANTILISM

By [illegible] LATHAM [illegible]

[illegible] Rose Bradford [illegible] 1907 that Barlow [illegible] disease as a [illegible] tickets and [illegible] in which signs [illegible] upon purely [illegible] rickets or infantilism [illegible] may be found in the [illegible] the pathological [illegible] several conditions [illegible] type of chronic nephritis [illegible] nephritis there [illegible] disease nor may [illegible] may have produced [illegible] The condition [illegible] symptoms of rickets [illegible] attention is so much [illegible] the disease may be regarded [illegible]

This variety [illegible] may show [illegible] Weber recognizes [illegible] of infantilism and [illegible] the condition is considered [illegible] of symptoms is delayed [illegible] at birth and the infantile [illegible] or dysbiotrophy. This [illegible] infants a few weeks old [illegible] infantilism and between [illegible] fatal uræmia (Rose Bradford) [illegible] tension, neuro-retinitis and [illegible] found to be not rare in all [illegible]

The work of Ellis and [illegible] extent to which chronic nephritis [illegible] dwarfism in rickets. They [illegible] many of whom infantilism [illegible] teen cases renal arrest in size [illegible] varying degrees of infantilism [illegible] extreme. Infected urine was [illegible] reports on these showed that for [illegible] in the form of nodules streaks in [illegible] medulla and

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Summary.—The appearances recorded in the [illegible] in the [illegible] instance—pyelonephritis and [illegible] at [illegible] with hypertrophy of the heart [illegible]

Discussion.

The [illegible] [illegible] the [illegible] searches, [illegible] the [illegible] if on [illegible] the light of the [illegible] and [illegible] and [illegible] and [illegible]

The [illegible] the [illegible] and the [illegible] [illegible] [illegible]

[illegible] of 90 mg. [illegible] later it was [illegible] Cockayne [illegible] reported long [illegible] such [illegible] generalized cystic disease [illegible] in striking contrast [illegible] usually ensues within [illegible] The [illegible] may be in the absence [illegible] impairment in these cases [illegible]

[illegible] which conforms with the [illegible] hypertension in chronic [illegible] by R[illegible] B[illegible] *et al*) applies only to [illegible] Where [illegible] infantilism, dwarfism [illegible] changes (in the absence [illegible] such cases will die [illegible] expansion and cardiac enlargement [illegible] found in the older childhood [illegible]

[illegible]

[illegible] Vol. [illegible] R[illegible] for [illegible] H[illegible] R[illegible] N V R [illegible] of the post-mortem [illegible] Vol. [illegible] for [illegible] of cardiac [illegible] operation [illegible]

[illegible] Med. 24 [illegible]
[illegible] 78, [illegible]
[illegible] *Lancet* 26, 153
[illegible] 231
[illegible] 4 [illegible]
[illegible] 2 [illegible]

AN EPITOME OF THE PREVENTION OF CERTAIN DISEASES AND INFECTIONS OCCURRING IN MAN

By Surg. Comdr. [illegible] BLACKLOCK, R.N.V.R. (Ret.)

Professor of Tropical Medicine, University of Liverpool

AEDES.—The [illegible] commonly artificial containers of water [illegible] and compound [illegible] bicycle tires and leaf axils.

AFRICAN OTHER SCROTAL [illegible] A [illegible] filarial microfilaria (adult unknown) which occurs in the [illegible] in West Africa (see Craw Craw).

ALASTRIM (*see* Smallpox).

ALEPPO SORE (*see* Cutaneous Leishmaniasis).

AMAAS (*see* Smallpox).

[illegible]

[illegible]

[illegible] 2 per cent [illegible] and servants [illegible] of soiled [illegible]

Country—World wide

[illegible] Dermatitis [illegible] and moult—[illegible] blood stream [illegible]

Personal—[illegible] or arms [illegible] river crossings

General—[illegible] of them Infective [illegible]

Country—Widespread [illegible]

[illegible] and Ground Itch)

[illegible]

ANCHILLES—The [illegible] and very often in [illegible]

ANTHRAX—Personal [illegible] carriers or contact [illegible] of healthy persons [illegible] notorious system Infection [illegible]

Personal—Vaccination [illegible] being tested Wearing [illegible]

General—Wide spacing [illegible] ventilation Spraying [illegible]

Country—World wide

ANTHRIS FERMORIOR—[illegible] on ground—have [illegible] suffused by man (skin [illegible] suggested)—[illegible] and by liver [illegible] [illegible] one

Personal and General—[illegible] Keep urban dust in latrines by antiseptic spray

Country—World wide

ANTHRIS (see Mepacrine)

ANTHROPODES [illegible] pounds—have [illegible] (Congo flea [illegible]) into crevices—feed at night on blood of people [illegible] and grow—pupa

[illegible]

[illegible]

Personal and General (*see* Schistosomiasis)

BITOT'S SPOTS (*see* Vitamin A)

BLACKWATER FEVER—Malaria parasites in blood of man before seldom during attack—haemolysis—methaemalbumin in blood plasma—oxyhaemoglobin and methaemoglobin in urine

Personal—Regular taking of prophylactic drugs quinine or atebrin In Nyasaland 5 gr of quinine daily increased to 10 gr when feeling out of sorts was the dosage adopted by the White Fathers On this regime no case of blackwater fever was recorded during twenty-eight years in a total of 600 persons employed

General—As for Malaria

[illegible] Especially those countries where there is malignant tertian [illegible] *falciparum*) malaria

[illegible] Dengue (see Hemorrhagic Typhus)

[illegible] Shiftings (see *Bacillus*)

[illegible] Epidemic Meningitis—*Diplococcus intracellularis* [illegible] in cerebrospinal fluid—spread by droplet method

Personal and General—Vaccine Antiserum Poliomyelitis Detection of and [illegible] carrier

[illegible] Weil's Disease

[illegible] (Spirochetosis)

[illegible] Anthrax B)

[illegible] Varicella—Herpes zoster skin not shotty as in small pox and [illegible] and [illegible] each other at about thirty-six hours—vesicles collapse [illegible] pustules in same place with—there exist papules vesicles and [illegible] in the same time—sore throat not common is in small pox—lumbar pains usually absent

Personal and General—Isolation patient until every scab has fallen off and the lesions are healed—pay attention to scalp

Country—World wide

Chigoe (Jigger) Flea (*Tunga penetrans*)—Adult male and female fleas on ground—females fertilized—penetrate skin of man and feed—grow and distend as the eggs ripen—eggs discharged—fall to ground—larvae emerge—pupate in cocoon—develop to adult flies

Personal—Avoidance of walking barefoot on ground infected with villages or on the floors of rest houses, certain huts and houses—Army Medical Corps include the following: Rub daily in oil or washed and well dried feet especially between the toes and under the nails a mixture such as 5 drops of lysol in 1 oz of vaseline

General—Regular polishing of floors, daily sweeping of floors of rest houses after applying liquid or powder solution—Avoidance of bad and dirty shore with fishing villages adjacent

Country—South America, Africa

Cholera—*Vibrio cholerae* in small intestine, stools—in feces and urine—on hands in flies food, water, dust—ingested germs infection

Personal and General—As for Amoebic Dysentery—Vaccination against cholera should be done

Country—Burma, India, China, Korea, Japan

Chrysops—Eggs laid near water usually on plants—larvae emerge and reach mud or water—larvae hatched grow much [illegible] adults emerge

Culex Fatigans and Hominivorax (see Bird Bugs)

Cysticercus Sinensis—Adults in bile duct, [illegible] in lumen—eggs in feces—in water, larvae escape—enter snails (*Bithynia* species and others)—become young cercariae, these emerge from snails and swim—enter fresh water fish (e.g. *Pseudorasbora parva*)—become metacercariae—ingested by man

Personal—Avoidance of eating fresh water fish uncooked

General (see Snail Destruction)—Cats and dogs are the most important endemic hosts

[illegible]

[illegible]

[illegible]

[illegible] with [illegible] in order to prevent infection [illegible] and the larval stage.

General—[illegible] of feces of everyone [illegible] all servants and [illegible]

Country—[illegible] especially.

Delhi Boil—[illegible] (Leishmaniasis)

Dengue Fever—[illegible] in blood—ingested by [illegible] develops—[illegible]

Personal—[illegible] mosquito screening [illegible]

Group—[illegible] all water containers [illegible] house and [illegible] water tanks [illegible] cloth of 28 [illegible] [illegible] small [illegible] spraying high grade petrol 2 to 3 [illegible] phonsh [illegible] oil [illegible] small medium [illegible] paraffin.

Country—[illegible]

Desert Sore—[illegible]

Dhobi Itch—[illegible] and [illegible] (somewhat) [illegible] and [illegible] by [illegible] the head and [illegible] grow and segment when the [illegible]

Personal—Avoid [illegible]

General—Cats and [illegible]

Country—Europe, America—[illegible]

Dysentery (Amoebic)—[illegible] Mucous [illegible] [illegible] infection [illegible] by [illegible] insects (Cockroaches, [illegible] [illegible] phenomena [illegible] [illegible] insect [illegible] [illegible] [illegible]

Personal and General—[illegible]

Country—Africa, America, West Indies.

Dysmenorrhoea—Rare in tropics.

Dyspepsia—[illegible]

Dyspnoea—[illegible]

Dysuria—[illegible]

Epidemic Encephalitis—[illegible] Epidemic Encephalitis. Pneumococcus [illegible] and [illegible] about 100,000 bacteria [illegible] minute. Almost all of the bacteria [illegible] killed [illegible] or four minutes (see Sprays).

Echinococcus (see Hydatid Cyst).

Elephantiasis (see Filaria under [illegible]).

Encephalitis Lethargica (see Epidemic Encephalitis).

Endemic Histolytica (see Amoebic [illegible]).

Endemic Typhus (see Murine Typhus).

Enteric Fever (see Typhoid Fever).

Enterobius Vermicularis (see [illegible]).

Enzootic Hepatitis (see Rift Valley Fever).

Epidemic Dropsy—A condition [illegible] and the

œdematous [illegible] in many cases are caused by eating certain [illegible]

Country—[illegible]

LEIDEMIA [illegible] to pass through the mucous membrane of [illegible] possibly [illegible] catarrhal organisms and to reach the lymph by the [illegible] Transferred by droplet method.

Period of Incubation—[illegible] No vaccine known.

Country—World wide.

[illegible] (*Trichomonas*) [illegible]

[illegible] Trichomonas bodies in naso-[illegible] infections [illegible] a cutaneous leishmaniasis [illegible] by *Phlebotomus* species [illegible]

Period of Incubation—[illegible]

Country—South Africa.

Country—South America.

[illegible] Hydatid of sheep and other [illegible] in four to six weeks—[illegible] parasite is born then [illegible] plants and grass—[illegible] three to five thousand—[illegible] three to the life threes.

[illegible] Bathing [illegible] drinking [illegible] of water plants e.g. water [illegible]

Country—South Europe.

Country—World wide.

[illegible] of man and pig—eggs in [illegible] and live free in water—enter [illegible] (*Bilharzia*)—sporocysts in snails [illegible] in water—cercariae [illegible] in eating the raw roots of [illegible]

Period of Incubation—[illegible] plants.

Country—South Europe.

Country—China, [illegible] Assam.

LEAFE BOTTLESSNESS [illegible]

[illegible] *Ozzioni*—[illegible] by the [illegible]—ingested by [illegible] and detected [illegible] multiplies [illegible] in about two weeks—[illegible] by insect [illegible]

Period of Incubation—[illegible]

Country—West Indies, South America.

[illegible] *Onchocerca* [illegible] *Dipetalonema* [illegible] *Mansonella* [illegible] and *Wuchereria bancrofti* [illegible]

[illegible] by the [illegible] *Rickettsia* [illegible] first taken up by the [illegible] *Mites* [illegible] the [illegible] in the rickettsiae which [illegible] the feces kept dry [illegible] infection for 65 days

[illegible] infection and in [illegible]

Personal and General — Hens and Rat Destroyers

Country — World-wide

[illegible] to [illegible] —adults [illegible]

Personal — [illegible] powder [illegible]

General — [illegible] cracks in [illegible]

TRANSMISSION [illegible]

LENTES — [illegible] and Hong Kong [illegible] [illegible] crunch (Dracunculus) [illegible]

Personal — [illegible] fertile [illegible]

General — [illegible] Separate [illegible]

Country — World-wide

CANCRUM (see [illegible])

General hinblue — [illegible] In [illegible] and upper [illegible] Foul water—infection [illegible]

Personal and General — [illegible]

Country — World-wide

GUINEA SPELTES — [illegible] while still in uterus—full [illegible] tion they themselves—[illegible]

Fully [illegible] in to sheets of newspaper [illegible]

GUINEA WORM — [illegible] and other [illegible]

Personal and General — [illegible]

Country — In tropics and [illegible]

GUINEA WORM (*Dracunculus medinensis*, [illegible] in Asia) — [illegible] from Eng. in human [illegible] surface—which on the skin [illegible] through the [illegible] tree—in water enter *Cyclops* [illegible] marine for [illegible] marks—[illegible] water swallowed by man—*Cyclops* digested and [illegible] and form [illegible] tion—fertilization occurs—female worm [illegible] in about 1 year females ready to extrude larvæ

Personal — Guarding water supplies from infected persons [illegible] of drinking only well water

General — Clearing wells, destruction of *Cyclops* in wells [illegible] In applying steam to wells [illegible] temperature [illegible] C

Country — India, Africa, South America

HEAT DISEASES [illegible] *Heat Cramps*—Drink milk or water with 90 [illegible] potassium chloride per gallon

(2) *Heat Exhaustion and Heat Hyperpyrexia*—Chewing glucose gum drops is said to be useful and is an aid to prevention. Heat exhaustion. Wearing loose light clothing with open neck [illegible] and shaded head gear. Avoid avoidance of overexertion especially in [illegible] Taking cover from direct rays of sun [illegible] mango trees [illegible] from the sun

Country—World wide

HELMINTHIC DISEASES—Adult [illegible] small intestine of carding and man—eggs in feces—in water [illegible] from eggs and snails—and snails (*Ampullaria canaliculata*) and [illegible] by fish—(*Mugil* and *Ambassis* species). Fish infected [illegible] eggs in urine organs which [illegible] and [illegible]

Fire snail in Clonorchiasis

Control (see Snail Destroyers)

Country—China, Japan, Philippines, Japan

HOOKWORM DISEASE (see *Ankylostomiasis*)

THREADWORM DISEASE (see *Filariasis*)—*Filaria bancrofti* [illegible] *Filaria malayi* [illegible] *Filaria loa* [illegible] *Filaria perstans* [illegible] *Filaria ozzardi* [illegible] *Filaria volvulus* [illegible] *Filaria sanguinis hominis* [illegible] *Filaria grami* [illegible]—*Filaria* [illegible] small [illegible] eggs in feces [illegible] ingested especially [illegible] Dwelling dog—[illegible] pass the fish [illegible] Dwelling man—[illegible] (species) [illegible] Where [illegible] may often [illegible] Dwelling [illegible] vegetables [illegible] Dwelling [illegible] Dwelling dogs with [illegible] and [illegible] in embryo [illegible]

Country—World wide

THORNHEADED WORM DISEASE—Adult [illegible] small intestine [illegible] and man [illegible] Dwelling man [illegible] Dwelling [illegible] and [illegible] Dwelling [illegible] eggs passed [illegible] Dwelling [illegible]

Control—[illegible] eggs passed [illegible] Dwelling [illegible]

Country—World wide

TRICHINOSIS—Adult [illegible] small intestine [illegible] and man [illegible] Dwelling man [illegible] Dwelling [illegible] and [illegible] Dwelling [illegible] Dwelling [illegible]

Control—[illegible] eggs passed [illegible] Dwelling [illegible]

Country—Worldwide

Control—Worldwide

Country—Worldwide

[illegible] Anterior Poliomyelitis

[illegible] Spirochetal Jaundice

[illegible] Apply solution of chloramine [illegible] then [illegible] and [illegible]

[illegible] Malaria (see Malaria)

[illegible] Malaria [illegible]

[illegible] (see Cholera)

KALA-AZAR (including Infantile Kala-azar) [illegible] *Leishmania donovani*) in endothelial cells [illegible] vessels and [illegible] bladder [illegible] taken up by *Leishmania* [illegible] pharynx, larynx, [illegible] their hues. Detachment [illegible] Widespread [illegible] spread [illegible]

B [illegible] Bed Bugs

[illegible] Dimpled Inlet

[illegible]

Kanimbla [illegible] *Sl* [illegible] *num*)

Kanimbla Valley [illegible] Mitchell Triplet

Kanimbla [illegible] Valley A

[illegible] Kanimbla Epidemic of Cutaneous Leishmaniasis

[illegible] Leishmania [illegible] nodular lesions [illegible] Mitchell Triplet [illegible] and other [illegible]

History A [illegible] Description of this Ring Lesion [illegible] Lesions since nurtured [illegible] Lesions [illegible] Ring Lesions

General—Survey of [illegible] and the [illegible] villages and [illegible] [illegible] Triplet [illegible] [illegible]

Country—World wide [illegible] and Tropics

Lesions [illegible] Specimen [illegible]

Leishmania [illegible] *Ft* [illegible] [illegible] [illegible]

[illegible] and building to kill lice and [illegible] [illegible] strain of typhus

[illegible] in temperate and subtropical regions

[illegible] *medinensis* [illegible] and [illegible]) —Parasites [illegible] *Ascaris* —develop in about one to three [illegible] small—sporozoites in oocysts enter the haemocele [illegible] glands—sporozoites are injected on next biting [illegible]

[illegible] hydrochloride 5 gr daily or atebrin 0 2 gm twice [illegible] a week Repellents Use of bed nets 28/29 mesh of 30/40 [illegible] Sprays for adults

[illegible] Reduction of breeding places drainage oiling Wet spray of [illegible] bist for larvæ (*see* Sprays)

[illegible] tropics subtropics and parts of temperate climates

[illegible] Undulant Fever)

[illegible] FEVER (*see* Undulant Fever)

[illegible] *Brucella* (*Phylleria*) *abortus* in abscesses blood urine [illegible] vesicles in rats cats dogs and man

[illegible] hygiene

[illegible] all patients excreta Rat destruction Cats and [illegible]

[illegible] India China India

[illegible] hydrochloride—Atebrin Acrichin Erion China [illegible] 0 05 to 0 1 gm (¾ to 1½ gr) Not a true pro [illegible] conjunctivitis are diarrhœa and colic The skin and conjunctivæ become [illegible] yellow without toxic symptoms An amount of [illegible] single dose on one day a week is a common preventive dose for

MICROFILARIA MALAYI—Microfilaria sheathed in blood of man by night—ingested by *Mansonia* and *Anopheles* species—pass through gut wall and develop with no multiplication in thorax head and proboscis in about two weeks—deposited by insect on skin during biting—penetrate skin

Personal and General—As for *Wuchereria bancrofti*

Country—Malaya East Indies India China

MITE-BORNE TYPHUS (Japanese River Fever Tsutsugamushi Disease Kedani Mite Disease Tropical Scrub Typhus K Form)—*Rickettsia orientalis* [illegible]—taken up by *Trombicula akamushi* and *deliensis*—the body cavity [illegible] lymphatic glands become infected—bite is stated to transmit it to human [illegible] The mites occur in rats and field mice and are also found in coarse [illegible] and on leaf of palm flowers

Personal—Prophylactic vaccination (of only temporary value) Protective [illegible] of clothing Disinfection of working clothes Repellents for special skin

General—Burning of bush and grass in endemic areas before workers start cultivation

Country—Japan China Malaya and other parts of the Far East

MOSQUITOES—Females lay eggs on water *Anopheles* and *Aedes* singly *Culex* in egg rafts—larvæ emerge and swim—feed grow moult several times—pupæ—adults emerge

Medicinal Properties and Dispensing.—[illegible]

[illegible] *Cordyl* [illegible] *Fuchsia* [illegible] composition [illegible] may consist [illegible]

Country—[illegible]

Nomenclature—[illegible]

Nomenclature—[illegible]

Natural Relationship—[illegible]

Organoleptic—[illegible] By a [illegible] by *Smilax* [illegible] (Author [illegible] *Fuchsia* [illegible]

Incompatibles—[illegible]

Incompatibles—Repellent [illegible]

Cautions—Cleansing [illegible] Use [illegible] in [illegible] [illegible] [illegible]

Country—Affected [illegible]

Organoleptic—[illegible] [illegible] [illegible] [

[illegible]

[illegible]

Nagueli [illegible]

Per [illegible] Kepkeke Spanish

Gen [illegible]

Cruzi [illegible] in Western Andes

OSTEOSE [illegible]

OXYURI [illegible]

PAMAQUINE [illegible] Pentaquine Plasmoquine Plasmoquine Do [illegible] Acts on gametocytes is a true prophylactic preventing [illegible] parasites May cause symptoms Methaemoglobinuria [illegible] pain

PARATYPHOID [illegible] Scarlet fever)

PARIS [illegible] —(1) *For infested clothing* Place [illegible] 10 [illegible] crystals in a metal container of about 10 gallon capacity [illegible] The clothes are put in the lid [illegible] gentle heat is applied to the bottom of the vessel [illegible] for twenty four hours turning over occasionally

(2) *For* [illegible] Arsenic 92 per cent soap 3 per cent [illegible] 2 per cent applied to cracks and crevices [illegible]

(3) *For the* [illegible] Spray

PARAGONIMUS Westermani Adult worms in lungs of man—eggs in sputum [illegible] in [illegible] cut—swim—enter fresh water snails (Melania [illegible]) [illegible] escape and encyst in crabs (P [illegible]) [illegible]

Prevent Avoid [illegible] eating crabs and crayfish under cooked [illegible] salads

(Lung [illegible] Small Distomum)

[illegible] Korea Formosa Philippines

[illegible] Measures as for typhoid Fever

[illegible] Milk Raise the temperature of the milk to 145 F [illegible] cool rapidly to below 55° F

[illegible] *pin* (see Lice)

PEDICULOSIS [illegible] of dermatitis in areas of the skin exposed [illegible] and symptoms [illegible] depression and insanity [illegible] and [illegible] little protein [illegible]

P [illegible] and does not occur [illegible] Avoid [illegible] 0 gm of the extract yearly daily prevents [illegible] and [illegible] trapezium dose 5 gr daily

[illegible] All [illegible] should be [illegible]

C [illegible] Wormwoodle

PELLAGRA [illegible] Vitamin B)

PHOTOGRAPHY [illegible] lines laid on [illegible] of cracks and creases in dark [illegible] organic matter—[illegible] clubs [illegible] stained in

be collected by [illegible] through [illegible] 40 mesh and the [illegible] placed in a saturated [illegible]

PHRYNODERMA [illegible]

PITHIRIS [illegible]

PIN WORM [illegible]

PLAGUE (*a*) *Bubonic* [illegible] or other) urgent [illegible] the fleas regin[illegible]

Personal [illegible]

General [illegible] and stores especially [illegible]

COUNTRY [illegible] sea ports

(*b*) *Pneumonic* [illegible] invade the lungs

Personal and General [illegible]

PLASMOQUIN [illegible] Primaquine)

PRESERVATION OF SPECIMENS [illegible] faeces [illegible] can be kept fairly well for future examination [illegible] methods

(1) *Cestodes and Trematodes* [illegible] per cent formalin add a few c c of glycerine

(2) *Nematodes* —Wash by shaking [illegible] in *normal saline* put in 3 per cent formal [illegible] place and keep in 70 per cent alcohol with glycerine

(3) *Fæces* —Make a middle-[illegible] with normal saline pour on 10 [illegible] cm formalin while stirring allow to settle [illegible] formalin with glycerine

PROTECTIVE CLOTHING (1) *Typhus* [illegible] mask [illegible] layers of surgical gauze [illegible] 20 [illegible] and provided with celluloid eye pieces [illegible] neck the trouser cuff [illegible] cloth sleeve covers to reach from [illegible] leather or rubber gloves

(2) *Bubonic and Pneumonic* [illegible] better [illegible] covers to make it more easily [illegible]

(3) *Relapsing Fever* [illegible] mask

(4) *Malarial Fever* [illegible] *Water* and *Sandfly Fever* [illegible] shirt [illegible] breeches puttees or leggings [illegible] and [illegible] evening

(5) *Trypanosomiasis* [illegible] long sleeved shirt with [illegible] with turn down shirts [illegible] boots a handkerchief [illegible] fly-switch [illegible]

(6) *Schistosomiasis* [illegible] high thick post mortem gloves [illegible]

[illegible]

RAT [illegible] many lesions in the bronch[illegible] rat (occasionally [illegible] and enlargement and [illegible] glands and blood [illegible]

[illegible]

[illegible]

INSECT [illegible] mites [illegible] crush with hot [illegible]

[illegible] *(the virus)* [illegible] Distribution *(b)* [illegible]

[illegible]

[illegible] BUNS [illegible] Sylph [illegible] [illegible]

RETURNING [illegible] by *Pediculus* [illegible] [illegible] Probably [illegible] and [illegible] next generation

[illegible] sleeping [illegible] floors and walls

[illegible] houses, hutch [illegible] mouth and [illegible]

[illegible] South Europe, Mid. America [illegible]

REPTILES [illegible] hours

(1) Adder [illegible]

(2) Light [illegible]

(3) Cheiradia [illegible]

RICKETS [illegible]

RUE VALLEY FEVER [illegible] lamb — in keep epidemic [illegible] *fuscipestis*

Personal [illegible]

General [illegible] in endemic areas

Country — Kent

ROCKY MOUNTAIN [illegible]

SANDFLY FEVER [illegible] by *Phlebotomus* [illegible] pass through [illegible] young leave

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Rocky [illegible] by [illegible] infl[illegible] Cattle [illegible]

[illegible] spread by [illegible] *Rhip*[illegible] and *Boiphi*[illegible] *colorum*[illegible] sidered [illegible] within Australia and Brazil [illegible] described [illegible] by *Zimi*[illegible] species [illegible] animals [illegible] and wild cats [illegible] wild [illegible] agouti

This [illegible] *Ixodes a*[illegible] in blood [illegible] by bee— [illegible] parasite in bee [illegible] long time [illegible]

Personal [illegible]

General [illegible] of parasite [illegible] under [illegible]

Country [illegible] Russia Poland

[illegible] have [illegible] cattle [illegible] female [illegible] man—[illegible] blood and [illegible] under [illegible]

Pers[illegible] and avoidance [illegible]

General [illegible] from slaughter [illegible] with [illegible] carcases

Country [illegible]

[illegible]

[illegible]

Personal—Avoidance of endemic areas [illegible]

General—Trapping of flies. Destruction of [illegible]

Country—Tropical Africa

(2) South American Chagas Disease—*[illegible]* taken up by larvæ of reduviid bugs (e.g. *Pan[illegible]*)—develop in hind gut and rectum—microcyclic [illegible] with fæces—contaminate and infect bite wound [illegible] bug stages to adult bugs which also infect

Personal—Swatting. Avoid being bitten by [illegible] dropping on floor for adult bugs which can fly [illegible]

General—Smooth floor and walls, spray [illegible]

Country—South America

Tsutsugamushi Disease (*see* Mite borne [illegible])

Tuberculosis—(a) *Lung*

Personal—Wide spacing and head to foot [illegible] free ventilation. Spray as for Droplet Infection

General—Detection of cases, isolation. Control of spitting, antiseptics for sputum

(b) *Alimentary*

Personal—Pasteurization or boiling of milk

General—Tuberculin testing of dairy cattle and isolation and slaughter of infected animals

Country—World wide

Tularemia—*Bacterium* (*Pasteurella*) *tularense* in blood of rodents—very infective by contact—also taken up and [illegible] mechanically transmitted by flies (*Stomoxys calcitrans* and *Chrysops discalis*), by ticks (*Dermacentor andersoni*, *Haemaphysalis leporis palustris* and others), by mosquitoes (*Aedes*, *Theobaldia*), by bugs (*Cimex lectularius*) and by fleas (*Ceratophyllus acutus*)

Personal—Protective clothing. Thick post mortem gloves for handling rodents

General (*see* Rat Destruction)

Country—World wide

Tumbu Fly (*Cordylobia anthropophaga*)—Flies fly eggs on earth of floors

[illegible] of man [illegible] and [illegible] ground [illegible]

Personal [illegible] Boots of [illegible] ing done [illegible]

[illegible] – Mosquitoes [illegible] daily [illegible]

[illegible] Aliens [illegible]

[illegible] – Bacilli in ulcers [illegible] this food water [illegible]

[illegible] the Dysentery [illegible] A [illegible] should be [illegible]

[illegible] Enteric Fever [illegible]

[illegible] (Typhoid Fever)

[illegible] Louse-borne Typhus)

[illegible] and Mite-borne Typhus)

[illegible] (Malta Fever Cattle and Pig Abortus [illegible] *melitensis B abortus* or *B suis*) in blood [illegible] cattle and pigs respectively—milk of goats [illegible] meat handled may cause infection—[illegible] carrying organisms

[illegible] avoidance of drinking unpasteurized milk of goats and cows [illegible] of meat

[illegible] safe disposal of all excreta of patients isolation of carriers Festin [illegible] cattle and pigs and segregation or slaughter of infected ones Circumcision [illegible] their

Country [illegible] Wild life

VARICELLA (see Chicken pox)

VARIOLA (*see* Smallpox)

VELDT SORE Chronic ulcers on exposed parts of the body—some of the [illegible] yield diphtheria bacilli and are benefited by injection of 4 000 or more units of anti diphtheritic serum around the sores

Personal—Protective clothing to prevent cuts and abrasions of the skin Destruction of rats

General—Safe disposal of horse manure which is said to be a source of infection Reduction of fly breeding

Country—Desert regions of tropics and subtropics

VERRUCA PERUANA A granulomatous eruption due to *Bartonella bacilliformis* which may occur some weeks after Oroya Fever—the eruption resembles yaws (*see* Oroya Fever)

VITAMIN A (Beta-carotene)—A deficiency of vitamin A causes xerophthalmia Bitots foamy spots on the conjunctiva keratomalacia and phrynoderma

Prevention—Diet should contain such elements as fresh vegetables beans carrots palm oil soya bean oil fish liver oils Liquid paraffin should not be

[illegible] (B D H) [illegible]

[illegible] Also [illegible]

Country—World wide

[illegible]

Prevention—[illegible] beans lentils [illegible] daily

[illegible] cool [illegible] free stores [illegible] in diet

Country—World wide

VITAMIN B (Riboflavin Lactoflavin Vitamin G) Deficiency of vitamin B causes angular stomatitis [illegible] Riboflavin 2 to 3 mg

Country—World wide

VITAMIN C (Ascorbic Acid) Deficiency [illegible] scurvy

Prevention—[illegible] oranges vegetables [illegible]

Preventive dose [illegible] Ascorbic Acid [illegible]

Country—World wide

VITAMIN D—Deficiency [illegible] calcium and phosphorus [illegible] spasmophilia and [illegible]

Prevention [illegible] 1 Calciferol [illegible] 1 000 to 2 000 [illegible] therapeutic [illegible] and 5 000 [illegible] children under [illegible] 12 mg per [illegible] indicates a toxic effect

WORMS (*Ascaris lumbricoides*) Adult [illegible] appendix and colon [illegible] eggs on ground may be [illegible] years [illegible] and water—ingested by man [illegible]

Personal—Boiling [illegible] vegetables Avoidance of raw salads [illegible]

General—Safe disposal [illegible] Breeding places of flies

Country—World wide

WORMS [illegible] man at night [illegible] numerous [illegible] pass through [illegible] thorax head and proboscis [illegible] by [illegible] skin during biting—[illegible]

Personal—[illegible] screening for houses spray at [illegible]

General—Rid [illegible] and [illegible] compost

Country—World wide [illegible] Asia Africa [illegible]

[illegible]

[illegible] tous le[illegible] [illegible] by tertiary [illegible] [illegible] by the [illegible] [illegible] stage [illegible]

[illegible]

[illegible] skin

Per [illegible] Dec[illegible] [illegible] ten days

[illegible] America Africa

Clinical Notes and Cases

THE STORY OF AN ANKLE STAIN

By Surgeon Lieutenant A. Richards, R.N.V.R.

[illegible] 1911 [illegible] stoker [illegible] was reported ill [illegible] [illegible] of his ship. He was released of [illegible] [illegible] two pipes and of [illegible] [illegible] hospital for observation.

[illegible] Both parents [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible] He then a [illegible] the same thing [illegible] anything hard [illegible] Stoker C [illegible] And [illegible] same things [illegible] I'll get him [illegible] he got [illegible] brown, [illegible] I'll [illegible] half [illegible] would [illegible] down. He [illegible] He resumed in the same [illegible] Stoker C. I'll kill him with [illegible] he is still hanging [illegible] I told him to think [illegible] too hot. He jump [illegible] room to feel a power [illegible] has had again and made [illegible] and after half an hour of [illegible]

[illegible] of the sub [illegible] We went through woods [illegible] that he remembered all [illegible] He [illegible] that Chief Stoker C was [illegible] but again [illegible] He could [illegible] the last day.

He [illegible] He was [illegible] tell me about [illegible] We [illegible] went into the [illegible] it was dark then [illegible] felt a [illegible] get at home [illegible] He jump [illegible] man and had [illegible] I [illegible] man [illegible] Mr. [illegible] no [illegible] he [illegible] told him [illegible] birth [illegible] able to [illegible]

The [illegible] the [illegible] that was [illegible]

He was [illegible] proved [illegible] to full [illegible] 22 [illegible]

[illegible] to Surgeon [illegible] case

[illegible] AUXILIARY SALIVARY [illegible]

By [illegible] Lieutenant (D) R. [illegible]

[illegible]

GENERALIZED [illegible]

By [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] colleague [illegible] added to his complaint [illegible] story was [illegible] described above. I thought [illegible] and an impression [illegible] suspected [illegible] he was suffering from some [illegible] gonorrhœa. [illegible] was ordered for his [illegible] constipation [illegible] treated. After ten days [illegible] last he was [illegible]

On [illegible] time he was relieved [illegible] completely unknown pain [illegible] forth in [illegible] of pain in the right loin [illegible] He [illegible] coverage from his [illegible] attitude and his [illegible] of genitourinary origin. [illegible] effort should be made [illegible] (and [illegible] should that become [illegible] but to [illegible]

[illegible] there is [illegible] necessary to [illegible] the local pathological [illegible] culture [illegible] This result is [illegible] the time of [illegible] and [illegible] point.

[illegible] This appeared [illegible] small [illegible] fell right [illegible]

[illegible] days [illegible] to the [illegible] and [illegible] on September [illegible] [illegible] the [illegible] [illegible]

[illegible]

[illegible] hard [illegible] operated [illegible] pressure [illegible] had [illegible] about [illegible] journal [illegible] [illegible]

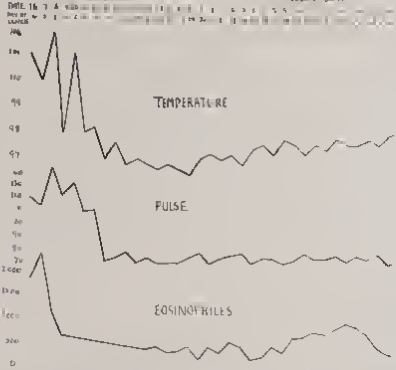
[illegible]

[illegible]

A CASE OF [illegible] SHIELD [illegible] STIMULATED MENTAL SYMPTOMS

[illegible]

[illegible]


TEMPERATURE
PULSE
EOSINOPHILES

[illegible] 280 per cubic millimetre, until [illegible] 80 per cubic millimetre, accompanied with a [illegible]

[illegible] centrifuged laked blood [illegible] and from the left arm slowly [illegible] *Entamœba histolytica* [illegible]

[illegible] stung, in that there [illegible] mental [illegible] passion with very [illegible] and [illegible] in the [illegible]

[illegible] including [illegible] the sinus and [illegible] ulcers. He also [illegible] that the right were greater than the left [illegible] changes as the patient [illegible] usually [illegible] the illness after [illegible] strike his head [illegible] the mental trouble. He regarded his case as a toxic [illegible]

[illegible] of [illegible] cases [illegible] the symptoms [illegible] of [illegible] and [illegible] that [illegible] the best work and seldom persists for more [illegible] the [illegible] illness. He [illegible] that [illegible] of the [illegible] [illegible]

[illegible] by [illegible] the [illegible] and [illegible] [illegible] I must stress the mental changes [illegible] which should [illegible] symptoms [illegible] Differentiation [illegible] This [illegible] of [illegible] bronchitis [illegible] long [illegible] likely explanation of the rusty sputum [illegible]

Bacillary [illegible] cases should [illegible] sleeplessness, lethargy and listlessness, and [illegible] stupor, [illegible] developing a transient quadriplegia [illegible] and affection [illegible]

[illegible] admitted [illegible] on [illegible] occasions recently, whilst on leave [illegible]

Summary. [illegible] recent literature [illegible] seldom that this combination once thought [illegible] relatively rare in this country, is now a factor to be [illegible] hypnosis [illegible] mental illness, as well [illegible] of the mental changes [illegible] illness and [illegible] of the illness [illegible] only by [illegible] and [illegible] listen [illegible]

In this [illegible] the [illegible] pulse-rate and temperature and absent right [illegible] and [illegible] regard [illegible] depression and [illegible] to [illegible] phases being placed on the [illegible] so that the physical condition was attributed to the [illegible] and the mental [illegible] changes taken separately [illegible] of hysteria.

[illegible] Brittain (R.A.F. D.V.O.) for permission

[illegible] under Crewdson Cranston, [illegible] R N V R [illegible] Lieut-Colonel [illegible] R N V R and Dr [illegible] for [illegible] help with the [illegible] and Miss [illegible]

REFERENCES

(1) [illegible] 1941 111
(2) [illegible] Med J [illegible] 1941 1 [illegible]
(3) [illegible] 2 [illegible]
(4) Dr [illegible] Ind 1941 2 [illegible]
(5) [illegible] and Aitken [illegible] 1941 2, 490
(6) [illegible] and Ross [illegible] 1941 2, 497
(7) Brit L [illegible] Brit Med J [illegible] 1941 2, 905

RUPTURE OF A LARGE HYDRONEPHROTIC KIDNEY

By [illegible] Commander [illegible] CERRAHD R N V R

A [illegible] RN [illegible] Oct [illegible] 1941 [illegible] previously [illegible] flash [illegible] of [illegible] He [illegible] about half an hour but this [illegible] After [illegible] 84 and [illegible] However [illegible] and extend [illegible] smelling was [illegible] pelvis [illegible] almost [illegible]

[illegible] R [illegible] 108 [illegible] globin 92 [illegible] Moss

[illegible] the [illegible] time [illegible] quinol [illegible]

He [illegible] found [illegible] showed R [illegible] cent He [illegible] operation [illegible]

Anaesthesia [illegible] timed with [illegible] mended [illegible]

[illegible]

TWO SURGICAL CASES OF UNUSUAL INTEREST OCCURRING AT SEA

By Surgeon Commander F. B. Garnett Passe, F.R.C.S., R.N.V.R.

The first case is one of [illegible] intestinal obstruction due to a rare cause among seamen supposedly fit, and the second [illegible] among the same week shows a novel [illegible] ships [illegible] and a Neill-Robertson stretcher.

Case I.—[illegible] distribution due to [illegible] and dental tuberculosis in a [illegible] patient.

A [illegible] Officer [illegible] on March 1, 1941, of gripping pains in the lower abdomen [illegible] Mind [illegible] Appetite listless [illegible] quickly [illegible] There was no [illegible] appetite [illegible] fairly good but [illegible] constipation.

He is turned [illegible] and [illegible] occasionally with an enema

[illegible]

[illegible]

The [illegible] ed to await in depot ship for passage to United Kingdom.

[illegible] was that [illegible] a stoker who developed an acute mastoid [illegible] rovelt. A signal was made to the nearby [illegible] at the [illegible] on board this ship. There was [illegible] was ordered to come alongside as for mining at

[illegible]

[illegible]

[illegible] reported the [illegible] guard [illegible]

[illegible] Officer [illegible] or [illegible]

A [illegible] HAS BEEN FREQUENTLY SUSTAINED AT SEA

[illegible] AGENT R.N

[illegible] as escort to a [illegible] jointly with [illegible]

[illegible] report [illegible] the main truths [illegible] to the [illegible] [illegible] —if [illegible] test [illegible] [illegible] shall make the [illegible]

[illegible] of [illegible] [illegible] [illegible]

[illegible] to proceed [illegible] 2000 were [illegible] unhappily [illegible] my homes [illegible] and return [illegible] with [illegible] we will [illegible] Sand[illegible]

Reviews.

ANÆSTHETICS [illegible] By Ronald Wel[illegible] Surgeon [illegible] C.V.O., M.A., B.M. [illegible] D.A. Anæsthetist Special [illegible] Medical Service [illegible] Senior H[illegible] Hospital St. [illegible] Anæsthetic Registrar and First Assistant [illegible] Hospital &c. [illegible] London: H. K. Lewis & Co. [illegible] Price 6s. net.

This [illegible] has been w[illegible] who are away from the Light [illegible] in a number of [illegible] All essential aspects of anæsthesia [illegible] The theoretical side of the [illegible] is lightly held to [illegible] is intimate [illegible] always in [illegible] the chapter on anæsthesia in relation to war [illegible] to the use of these bags [illegible] and regional [illegible] This is a [illegible] anæsthetist & [illegible] who offers [illegible] operation [illegible]

[illegible] Barlow, M.A., M.B., F.R.C.S., S.R.N., D.N. (Leeds and [illegible] Hinchliffe, Ist Sister Tutor [illegible] Hospital [illegible] for the [illegible] Nursing Reserve [illegible] & Sons, Ltd. [illegible] 256 200 Illustrations. Edinburgh: [illegible]

[illegible] pulling on a complicated bandage [illegible] and many of us have witnessed the [illegible] surgeon's hands over this duty [illegible] be undertaken from this that the [illegible] that he is paying a tribute to the [illegible] which has fallen by custom largely to her. On [illegible] and used to be a source of anxiety [illegible] lest his bandages should fall off [illegible] With [illegible] many First Aid Workers, A.R.F. [illegible] are called upon to do bandaging [illegible] they are doing the work properly [illegible] 10th edition has been written by [illegible] from the first page to the last [illegible] a lecture on bandaging and [illegible] This is essentially a book [illegible] of applications of bandages, while other photographs [illegible] the arterial pressure [illegible] of fracture. There are 200 [illegible] and historical sketch as an example [illegible] photographs showing successive stages [illegible] of application. The technique of applying a capeline [illegible] illustrates how this favour [illegible] applied. The same simplicity pervades

[illegible] illustrations [illegible] sonal

Method [illegible] for [illegible] [illegible] is [illegible] [illegible] these subjects [illegible] and the [illegible]

Air Crew in [illegible] By Major [illegible] logy Consultant [illegible] Toronto [illegible]

This little book [illegible] attitude very [illegible] force and cohesion [illegible] able in Air Ministry [illegible] standable by those [illegible] good and sound [illegible] the explanation of [illegible] breeding of air sickness [illegible] the first time [illegible] given curative [illegible] book the fact that [illegible] should [illegible] the Air Crew [illegible] standing of [illegible] Medical interesting [illegible] and [illegible] personal [illegible] obtained [illegible] A [illegible] properly under [illegible]

Aches in [illegible] By G. [illegible] Surgery New [illegible] Neurasthenia [illegible] [illegible]

An book [illegible] medical [illegible] up in this [illegible] the [illegible] proof [illegible] these [illegible] prospects [illegible] perhaps [illegible] are [illegible] [illegible] two [illegible] has [illegible] but [illegible] [illegible] [illegible]

News of the Service

BIRTHS

[illegible] 31 1943 at St. David's Wing Royal Northern Hospital [illegible] (née [illegible]) wife of Surgeon Lieutenant Gerard S. Irvine R.N. [illegible]

[illegible] 1942 at Hammersmith Hospital to Gillian wife of S[illegible] Lieutenant R.N. a daughter.

OBITUARY

Our deepest sympathies are extended to the relatives of the following officers whose [illegible] have occurred since the last issue.

SURGEON LIEUTENANT-COMMANDER HERBERT CHALMERS ANDERSON R.N.V.R. The youngest son of the late W. A. Anderson and Mrs Anderson of Glasgow graduated M.B. Ch.B. (Glasgow) in 1935. After holding the post of Junior Surgeon at the Royal Alexandra Infirmary, Paisley, he settled in practice near Loch Lomond and was about to take the second part of the [illegible] when war broke out. In 1940 he entered the R.N.V.R. as a Surgeon Lieutenant and soon rose to Lieutenant Commander and was senior officer. He was second medical officer in H.M.S. *Ajax* in which ship he died. He leaves a widow.

A friend writes: Chalmers Anderson was a great theoretician. In his casual observer he appeared a serious minded, unassuming Scot who got little fun out of life. This is not true. He was free from irksome restraint. He had a great sense of humour and a very wide knowledge of human nature. He had a great sense of humour and a very wide knowledge of human nature. He was widely read, a pleasant and an enthusiastic physician who loved to seek out new adventures at every point of call. But his personality was his greatest asset. He was greatly loved by all his messmates both of the Officers' and lower decks who could always go to him with their troubles whether real or imaginary.

SURGEON LIEUTENANT JOHN WENDOVER ASHLEY R.N.V.R. The eldest son of Mr and Mrs J. Ashley of Harrow, Wendover, he was reported missing, presumed killed on active service. He was born on September 5th 1914 and was educated at the University of Oxford where he gained his M.B. B.Ch. in 1939. He entered the R.N.V.R. soon after. He embarked and was appointed while serving in a destroyer in 1940. He had also served in H.M.S. *Hyacinth*.

[illegible] COMMANDER FRANK CECIL MAYALL RANDOLPH R.N. is reported missing presumed killed in action in H.M.S. *Dorsetshire*. He was the younger son of Mr F. Dam Randolph of Glasgow and was elected at the L. Bernaly of Glasgow where he graduated M.B. Ch.B. in 1926. After holding the post of Junior Surgeon at the Western Infirmary, Glasgow, he entered the Royal Navy in 1928 and was promoted Surgeon Commander in 1933 and became Surgeon Commander in 1939.

A friend writes: The death in action of Cecil Randolph is a great personal loss to all who knew him. Three months before Christmas he was promoted his [illegible] and was serving with a [illegible] in the Mediterranean. He was a great sailor and a great [illegible] of the American Ambassador was not of long duration and was soon home. We became close friends in 1917 while serving as colleagues in Glasgow Corporation Dental College after the war. We met occasionally and then he London accidentally in 1928. He had just completed his [illegible] at the Royal Naval Hospital Haslar and was proceeding to the China Station. I left that year. I also moved to the Far East and while in Singapore in H.M.S. *Hermes* whilst was engaged on survey work off the Bonin Islands he was frequently ship to spend week-ends with me and whose letter I suffered in London my home was his home. He was quiet and [illegible] retiring disposition, warm hearted, kindly and hospitable to those who were less fortunate and always winningly humorous. He had many friends always to relive and was an excellent [illegible] companion. We had many enjoyable hours together on the

[illegible] here. He had a varied career [illegible] Borneo, the Eastern Mediterranean [illegible] Imperial Service Medal (Egypt) [illegible] months hurrying refugees [illegible] Mons. He was during the Civil War. At the beginning of Chalmers's [illegible] Surgeon Commander [illegible] on my behalf [illegible] hopes I can never be grateful [illegible] closest friends [illegible] received a typical telegram [illegible] his best man. The funeral in Glasgow Cathedral was [illegible] reception afterwards a happy family reunion. The deepest [illegible] young widow and his grieving family.

Surgeon Lieutenant Adrian Michael Harry, R.N.V.R., was [illegible] was the eldest son of Mr. and Mrs. R. A. R. [illegible] He graduated M.B., B.Ch. at University of Cambridge [illegible] Walter Dixon Scholarship by the Cambridge [illegible] fellowship year. He entered the R.N.V.R. [illegible] September 1935.

Surgeon Captain John Boyan, R.N., [illegible] Staff Surgeon in 1906 and left Surgeon in 1911. He served in the [illegible] *Bulldog* and *Bristol*. He was [illegible] the regulation on January 1, 1921. He died in March [illegible] at Launceston.

Surgeon Lieutenant Basil Richard Bray, R.N.V.R., [illegible] was married, was killed in action [illegible] May 22, 1941. He was 27 years of age and [illegible] Sheffield.

[illegible] M.C. writes: [illegible] educated at the [illegible] came to Sheffield in 1935 after reading his [illegible] chemical studies. In 1938 he graduated M.B., B.Ch. [illegible] M.R.C.S. and L.R.C.P. diplomas. In 1940 he sailed [illegible] return he became a Casualty Officer at the [illegible] of war he volunteered for service in the Navy [illegible] R.N.V.R. [illegible] tenant. At Narvik he did splendid work [illegible] whilst the enemy attacked. His untimely death [illegible] a great loss. His [illegible] and his professional [illegible] he regretably completed [illegible] death. He is sorely missed. To his parents and [illegible] the sincerest [illegible]

Surgeon Lieutenant Christopher Robert Mills, R.N., [illegible] April 3, 1942 during an air raid. [illegible] Mr. and Mrs. [illegible] Walker [illegible] He [illegible] M.B., C.B. in [illegible] Albert [illegible] and Durham. In [illegible] the [illegible] Lancashire and Cumberland in December 1938. Since [illegible] H.M.S. *Hermione* and H.M.S. *Lynx*.

A colleague writes: "[illegible] Coming from Wick in Caithness he was [illegible] popular and amongst his [illegible] and [illegible] place. Of middle height [illegible] But once your friend he was expansive [illegible] delight. After satisfying the Norse and [illegible] was settled down [illegible] for some well or other. He was much [illegible] the Service, where he helped [illegible] One remembers him at his [illegible] during shelling periods or at [illegible] more southerner than Lizzie and Chris [illegible] out. His ideas on philosophy and [illegible]

[illegible] Almost [illegible] recommended [illegible] for his courage. He [illegible] and has been [illegible]

[illegible] was lost [illegible] professional colleagues [illegible] MRCS [illegible] 1921. After a [illegible] Hospital [illegible] only practice [illegible] served the [illegible] 1941. He had [illegible]

[illegible] published [illegible] 1931 [illegible] many LCM [illegible] many of the [illegible] and [illegible] in March [illegible] HMS [illegible] he fell sick and [illegible] Royal Infirmary [illegible] 1943. He had [illegible] wife.

[illegible] RNVR [illegible] assing [illegible] Brand [illegible] Mr. E. M. Gregory [illegible] CBE, DSO, DCL [illegible] RNVR [illegible] HMS [illegible]

[illegible] RNVR [illegible] assing, [illegible] HMS [illegible] October 1931. He [illegible] LM Prize [illegible] the way [illegible] MB [illegible] 1938. In the House [illegible] Surgeon [illegible] was [illegible] of the [illegible] Medal [illegible] the [illegible] and [illegible] the House [illegible] Parish [illegible] apparently [illegible] Casualty [illegible] and [illegible] House. My [illegible] pass through Medical School [illegible] and all who knew him will be sad that he has gone.

Surgeon Commander Lt. Cmdr. Cho[illegible] RNVR, who was officially presumed killed in HMS *Neptune* on [illegible] son of Mr. and Mrs. G. [illegible] Charles [illegible] RNVR at Cambridge [illegible] the MBBCh [illegible] 1928, proceeded [illegible] MA in Medicine [illegible] BCh degree in 1932 and

[illegible] M.B., B.S. [illegible] Resident Medical Officer [illegible] Assistant at the Hospital for Women [illegible] Assistant Surgeon [illegible] Assistant Surgeon [illegible] Surgeon [illegible] Surgeon [illegible] R.N.V.R. [illegible] the war and [illegible] rank of Surgeon Lieutenant Commander being called up for [illegible] that year. On January 1, 1941, he was promoted to Acting Surgeon Commander. He died in harness in hospital. He leaves a widow.

A [illegible] writes: "A very [illegible] of the [illegible] pos[illegible] regretted. [illegible] H.M.S. *Neptune* [illegible] which he was [illegible] presumed to have lost his life."

Edmund Earl Cardridge, who [illegible] from Tarkworthy qualified at St. George's Hospital and [illegible] appointments there and subsequently went into practice. [illegible] was most successful from the start and soon became one of the best [illegible] practitioners. He had for years been a [illegible] of the R.N.V.R. [illegible] Hero-about the war having [illegible] in the *Journal*. He was [illegible] in the Tarkworthy [illegible] and cheerful with a great gift of [illegible] a very [illegible] good doctor. [illegible] could have been more [illegible] wife and children, to whom he was devoted. [illegible]

Surgeon Commander James Michael McNamara, R.N., [illegible] published M.B., B.S. from the National University of Ireland in 1925. He joined the Royal Navy in December 1928 and was promoted to Surgeon Lieutenant [illegible] Surgeon Lieutenant Commander six years later. He died on April 9, 1942, from wounds received in the sinking of H.M.S. *Hermes*.

M.S. writes: "McNamara, who was Principal Medical Officer on H.M.S. *Hermes* at the time she was lost recently off Ceylon, had served in this ship for about three years, receiving his promotion as Commander in the end of 1940. He had spent most of his time at sea in small ships and in shore barracks. *Hermes* was the flagship he had served in and he had done little hospital work. He was an Irish gentleman and after qualifying spent a short time in general practice before entering the Navy. In his University days he was very well known for his prowess at boxing and had made quite a name for himself in this sphere. I was lucky enough to serve with him as my P.M.O. for the first two years of the war and I shall always remember with gratitude his amazing kindness, his great readiness to show one anything, and his helping hand. I one had made a mistake. He was a great character in the ship. Sailors, as he was called, was greatly beloved by everybody in the wardroom and the ship, he was an great talker—everybody felt that they had in him a friend and they say to whom they could go. I miss they wanted."

Surgeon Lieutenant Cecil James Mathias, R.N.V.R., who was reported missing is now presumed lost in action in November 1941 in H.M.S. *Dunedin*. He was born on July 26, 1909, and was educated at the University of Cambridge, where he graduated B.A. and at University College Hospital, qualifying M.B., B.S., L.R.C.P. in 1939. He held the posts of Resident Medical Officer at Ashford (Kent) Hospital for Diseases of the Chest, London, where his father, Dr. W. A. Mathias, of Upper Brook Street, is Physician. He leaves a widow.

Surgeon Lieutenant-Commander Douglas Lascelles Newberry, R.N., who was reported missing in December 1941, is now presumed to have been killed in H.M.S. *Repulse* on December 10, 1941. He [illegible] his profession at Guy's Hospital, qualified M.R.C.S., L.R.C.P. in 1926 and immediately entered the Royal Navy as Surgeon Lieutenant, being promoted Surgeon Lieutenant-Commander in 1932 and Surgeon Commander in 1938. In September 1926 he was appointed to the flotilla leader *Keppel* for duty with the destroyers of the 6th Flotilla, in 1929 he joined H.M.S. *Iron Duke*, and from 1930 to 1933 he was stationed at Gibraltar Dockyard. After further service afloat in H.M.S. *Renown* and H.M.S. *Tamar*, he was appointed at Haslar Hospital from 1934 to 1937, when he was appointed to H.M.S. *Queen*. He leaves a widow.

A recent incident in *The Times* writes: "Surgeon Commander Douglas L. Newberry, who was reported missing, in H.M.S. *Repulse* on December 10, 1941, is now presumed dead. He

was [illegible] in the sick bay. [illegible] passion for the sea [illegible] He left [illegible] to his going to the Navy. [illegible] to become a doctor and to enter the R.N. [illegible] way. During his training, [illegible] equal (1919-20) he lived under [illegible] for his future family [illegible] form a character except [illegible] independent. He joined H.M.S. [illegible] in 1926 and [illegible] and abroad was appointed in 1931 to Gibraltar Dockyard. In 1932 he married Fiona, daughter of Colonel and the Hon. Mrs. Bernard James [illegible]. Hayes [illegible] Greenwich and Malta. Douglas Newbery had an irrelevant [illegible] Hunger for himself and was satisfied with ready [illegible] He [illegible] his absolute integrity and devotion to duty. He hated [illegible] the [illegible] to music books and poetry.

[illegible] NEWMAN, R.N.V.R., who was reported missing in [illegible] have been killed in enemy action. He ship H.M.S. *Ark* was sunk in [illegible] September, 1940. He was born on May 1, 1914, and was educated at Wycliffe College and Hertfordshire University of Birmingham, where he graduated M.B., Ch.B. in 1938. He had held hospital posts at the Sheffield Royal Infirmary. In March 1939 [illegible] the Supplementary Reserve of the R.N.V.R., and was then called up. He was in turn [illegible] rank of Temporary Sub-Lieutenant and saw service at the first Battle of Narvik and at the Dunkirk evacuation. He leaves a widow, Dr. Iona E. Newman.

SURGEON LIEUTENANT ERIC ANTONY STOCKE, *M.B.E.*, R.N.V.R., qualified L.M.S.S.A. in 1939. He received his medical training at Guy's Hospital. He held resident appointments at the East Sussex Hospital, Tunbridge Wells. In December 1940 he entered the R.N.V.R. as a Probationary Temporary Surgeon Lieutenant and was [illegible] rank later. On January 2, 1941, he was appointed to H.M.S. *Malaya* and was awarded the *M.B.E.* in the New Year's Honours List, 1942. On January 17, 1942, he was reported missing, presumed killed.

SURGEON REAR-ADMIRAL GILBERT FRANCIS SYMS was born in 1883 and educated at Guy's Hospital, entering the R.N. as a Surgeon in May, 1909. He was promoted to Surgeon Lieutenant-Commander just before the last war, during which he saw service with numerous commands and served in the R.N.A.S. as well as in H.M.S. *Marlborough* and *Canterbury*. In 1923 he obtained the diploma F.R.C.S.Eng. and was appointed Surgical Specialist in R.N.H. Plymouth. His promotion to Surgeon Captain came in 1931, and he became Rear-Admiral in 1938, when he was appointed Medical Officer in Charge of Plymouth Hospital. On January 15, 1942, he was placed on the Retired List and died on June 23, 1942, after a long illness.

In the course of his distinguished professional Service career he was awarded in 1914 the Gilbert Blane Gold Medal and in November 1922 H.M. the King of Denmark conferred upon him the Knighthood of the Order of Danebrog. In July, 1941, he was appointed Honorary Surgeon to the King.

An old colleague writes: As a large-standing friend of Gilbert Syms in intimate contact with him during sickness and in health in at least three commissions during our long Service entente, I had every opportunity of appreciating and observing his striking personality in all its aspects. The somewhat taciturn exterior presented by him particularly in his Service relationships, and the actual man as tender and faithful and tender standing as ever since.

Syms had three outstanding characteristics—courage, judgment and a remarkable rejection of quick and sound decision. He was brought up in a Christian school, owing to his family being stricken by financial disaster while he was still a lad, giving abundant evidence of Guy's Hospital was a task he met with [illegible] intellectual integrity but [illegible] to his tenacity in those [illegible] circumstances.

Who is interested in the long and [illegible] certainly strongly successful surgeon his surgical exploits, but even when he was employed on [illegible] Canada and China happened to spend a [illegible] in his Service career, his good [illegible] and strength of character [illegible] the room and the work were well and truly done.

Not man would call Syms an academic or speculative man; nor was he a full in wide reader. Indeed he affected to despise such attributes. The latter somewhat unknowing effect on his age to research. What he did read, however, he digested thoroughly and in practical aims he was unparalleled. His thoughts were logical and orderly, his powers

[illegible] and once he dessed [illegible] appro[illegible] technically he was very [illegible] balls and then fairly. In [illegible] was [illegible] in communion on men and affairs [illegible] the day of [illegible] yet he was keen on most branches of sport [illegible] golf. Whatever the sport however he could [illegible] keen instinct of a born leader.

[illegible] who knew him as intimately as I did it was [illegible] the [illegible] knew well he was in what the referees would [illegible] [illegible] of his illness and right [illegible] the end [illegible] fun and courage an inspiration to all who knew him and [illegible] excellence a family [illegible]

Our keenest sym[illegible] and [illegible] low and lonely in their irreparable loss.

SURGEON LIEUTENANT [illegible] R N V R is the only son of Mr and Mrs Alexander Treloar of Bo[illegible] West Lothian. He was 27 years of age and graduated M B Ch B of the University [illegible] and had held the posts of resident medical officer of the Neuro[illegible] Hospital and House Physician at Bradford Royal Infirmary. Before joining H[illegible] R N V R as Temporary Surgeon Lieutenant in May 1941 he was House Surgeon and H[illegible] Fife County and City Royal Infirmary. On June 27 1941 he was appointed to H M S Cyclone and in January M 1942 was reported as missing, presumed killed [illegible]

The following medical officers have been reported as missing:—Surgeon Lieutenant G S Cross R N V R Surgeon Lieutenant C Fraser R N V R Surgeon Lieutenant S W Frail R N V R Surgeon Lieutenant D R Syred R N V R Surgeon Lieutenant W J Winthrope R C N V R

HONOURS

King's Honorary Physician

Surgeon Rear Admiral William Harold Edgar *O B E* has been appointed as Honorary Physician to the King.

The following Birthday Honours have been conferred by H M The King:—

K C B (Military Division)

Surgeon Vice-Admiral Sheldon Francis Dudley *C B O B E F R S M D B S F R C P* Lond *M R C S H P H D T M E H P* Medical Director General of the Navy.

C B E (Military Division)

Surgeon Captain Henry St Clair Colson *M B D P H R N*

O B E (Military Division)

The King has awarded the *O B E* to Surgeon Lieutenant David Moyalt Armstrong R N for coolness, leadership and devotion to duty when H M S *Kandahar* was lost. Surgeon Commander Cyril May *M C M R C S L R C P R N*

M B E (Military Division)

Surgeon Lieutenant Simon Melock *M B B S M R C S L R C P R N V R*

H[illegible] following Awards are not [illegible] in connection with the Birthday Honours.

D S O

Has been awarded to Acting Surgeon [illegible] under H MacKinnon Craig R N V R for gallantry and skill in the Battle of Crete while serving in H M S *Dido*.

D S C

Temporary Surgeon Lieutenant Harold Chumnis Isaksen R N V R has been awarded the *D S C* for during [illegible] and [illegible] at close range and

[illegible] on the [illegible] battle cruisers Admiral [illegible]

[illegible] Surgeon Lieutenant Johnston [illegible] R N V R

Mentioned in Despatches

Temporary Surgeon Lieutenant Allan Jardine Commander R N V R [illegible] for his work in dispatch [illegible] and resolution while serving [illegible] the Gorian [illegible] transports [illegible]

Surgeon Lieutenant Walter Morton Evans R N V R [illegible] Surgeon Lieutenant R N V R [illegible] R N V R [illegible]

Surgeon Commander Jamie Keeling R N Surgeon Commander Gerald [illegible] Surgeon Lieutenant R N V R and Surgeon Lieutenant Ronald Stewart R N V R [illegible] reported to be killed [illegible] have been mentioned in despatches

Surgeon Lieutenant Colonel Cook Wilson T D R N V R and Lieutenant Commander Surgeon Lieutenant David Wilson Wallace R N V R have been mentioned in despatches for gallant and distinguished service in the Mediterranean

GILBERT BLANE MEDAL 1942 AWARD

The above Medal has been awarded to Surgeon Commander Edward Rex [illegible] Williams M B M R C S L R C P H N

The following Awards have been made for outstanding [illegible] and [illegible] and for courage and wholehearted devotion to duty while serving in Naval Hospitals during the last six months [illegible] of the war

To be a member of the *Royal Red Cross* (First Class) —

Superintending Sister Miss K M Atkinson V R H

To be *Associates* —

Superintending Sister Miss O H Franklin

Acting Superintending Sister Miss I I Shipton

Nursing Sister Miss E A M Munnsell

Reserve Nursing Sister Miss B E Hogan

W A D Nursing Members Miss F A Bailey Miss D E Philbrook Miss J E I Black Miss E Roseveare and Miss L M Mills

RETIREMENTS &c

Surgeon Captain J G Dawson M B E B Ch P placed on the retired list March 1 1942 (and re appointed)

Surgeon Commander J D Baugh O B E M R C S L R C P placed on the retired list with rank of Surgeon Captain and re appointed the same as Surgeon Commander March 1 1942

Surgeon Lieutenants W D Tracey M B B Ch and W S Parker M B Ch B M R C S L R C P withdrew on completion of Short Service engagements and transfer to Emergency List and re appointed April 2 1942

Surgeon Lieutenant (D) L E Morris L D S withdrew on termination of Short Service engagement and transfer to Emergency List (and re appointed) March 10 1942

Surgeon Lieutenants (D) D N Williamson L D S and A F Ferguson L D S with drew on termination of Short Service engagements and transfer to Emergency List (and re appointed) March 10 1942

Surgeon Lieutenant (D) H Bradley Watson L D S transfers to Emergency List on completion of Short Service engagement (and re appointed) May 25 1942

PROMOTIONS

Surgeon Lieutenant-Commander A Long M R C S L R C P to be Surgeon Commander June 2 1942

Surgeon Lieutenants J Merrill M R C S L R C P D T M and B M Goldsworthy M B to be Surgeon Lieutenant Commanders April 3 1942

[illegible] Surgeon [illegible]

[illegible] Surgeon [illegible]

[illegible] Health [illegible]

WARDMASTERS

PROMOTIONS

Acting Warrant [illegible] to be Wardmaster [illegible] 1942

[illegible] Acting Warrant Wardmaster [illegible] May [illegible]

[illegible] Acting Warrant Wardmaster [illegible] May [illegible]

[illegible] Acting Warrant Wardmaster [illegible] March [illegible]

[illegible] Acting Warrant Wardmaster [illegible] March [illegible]

[illegible] to be Wardmaster [illegible]

[illegible] Acting Warrant Wardmaster [illegible] confirmed in rank [illegible]

[illegible] Warrant Wardmaster [illegible] confirmed in rank April [illegible]

[illegible] Warrant Wardmaster [illegible] confirmed in rank [illegible]

[illegible] Warrant Wardmaster [illegible] confirmed in rank [illegible]

ROYAL NAVAL VOLUNTEER RESERVE

RETIREMENTS AND RESIGNATIONS

[illegible] Maratimes placed on the retired list with rank of Captain April [illegible]

[illegible] Surgeon Lieutenant Commander [illegible] Surgeon Lieutenant [illegible] (temporarily unfit) March 16 1942

[illegible] Lieutenant [illegible] Gray M.B.E. [illegible] appointed [illegible] July [illegible]

[illegible] Lieutenant [illegible] Gray M.B.E. [illegible] appointed [illegible]

[illegible] Lieutenant [illegible] Barlow M.B.E. [illegible] February [illegible]

[illegible] Lieutenant [illegible] Bigway M.B.E. [illegible] appointed [illegible] March [illegible]

[illegible] Surgeon Lieutenant [illegible] Blackler appointed [illegible] March 14 1942 [illegible]

[illegible] Lieutenant [illegible] Kanna M.B.E. [illegible] appointed [illegible] March [illegible]

[illegible] Lieutenant [illegible] Rathbell M.B.E. [illegible] appointed [illegible] April [illegible]

[illegible] Surgeon Lieutenant [illegible] Aitchison M.B.E. [illegible] appointed [illegible] April [illegible]

[illegible] Lieutenant [illegible] Atkins [illegible] appointed [illegible] March [illegible] 1942

[illegible] Surgeon Lieutenant [illegible] Atkins M.B.E. [illegible] appointed [illegible] March [illegible]

PROMOTIONS

[illegible] Surgeon Lieutenant [illegible] Surgeon Lieutenant [illegible] March [illegible] 1942

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

APPOINTMENTS

Acting Matron Miss G. B. Martin to H.N. Hospital Haslar as Superintending Sister June 1942.

Superintending Sister Miss P. M. Wilkinson to H.N. Auxiliary Hospital Dundee as Acting Matron, to sail as soon as possible after March 25, 1942.

Nursing Sister Miss M. M. P. Dandy to R.N. Auxiliary Hospital Kingseat March 1942, as Acting Superintending Sister.

Nursing Sister Miss S. M. Silk to R.N. Auxiliary Hospital Sherborne March 1942.

Nursing Sister Miss F. M. Lawrence to R.N. Hospital Chatham March 1942.

Nursing Sister M. I. Burton to R.N. Hospital Malta, to sail as soon as possible after March 16, 1942.

Nursing Sister Miss E. A. M. Mouzwell to R.N. Hospital Haslar (ex Malta Hospital).

Nursing Sister Miss W. M. M. Matthison to R.N. Hospital Port Edgar February 1942.

Nursing Sister Miss N. M. Willoughby to R.N. Auxiliary Hospital Chislehurst, to be Acting Superintending Sister February 1942.

Nursing Sister Miss W. M. th S.C. Everleigh to H.N. Auxiliary Hospital Dundee.

Acting Superintending Sister, to sail as soon as possible after March 25, 1942.

Nursing Sister Miss E. G. Foot to H.N. Auxiliary Hospital Colombo.

Nursing Sister Miss I. W. Yellowlees to R.N. Hospital Haslar March 1942.

Nursing Sister Miss M. Grimble to H.M. Hospital Ship *Oxfordshire*, to sail as soon as possible after June 8, 1942.

Nursing Sister Miss M. Phillips to W.R.N.S. Sick Quarters Bridgend March 1942.

Nursing Sister Miss O. M. Molyneaux to H.M. Hospital Ship *Oxfordshire*, to sail as soon as possible after June 8, 1942.

Nursing Sister Miss E. I. Blunden to H.N. Auxiliary Hospital Minster Magna June 1942.

Superintending Sister Miss K. M. Cooper, A.R.R.C., to R.N. Auxiliary Hospital, Perth, June 1942.

Superintending Sister Miss I. K. Coulmen to H.M. Hospital Ship *Lida*, to sail as soon as possible after June 25, 1942.

Superintending Sister Miss M. I. M. Trimble to H.N. Hospital Haslar, on relief.

Acting Superintending Sister Miss E. I. Shipton to R.N. Hospital Haslar March 1942 (appointment to H.N. Auxiliary Hospital Colombo cancelled).

Acting Superintending Sister Miss M. I. Blundstone to H.N. Hospital Plymouth June 1942.

RESIGNATION

Nursing Sister Miss I. C. Campbell resigned March 16, 1942.

Notice

THE HEBRIDEAN MEDAL

The Hebridean Society has decided to make a special award of the Hebridean Medal with an honorarium of twenty guineas for original work on the prevention of bunion pain with or without sciatic neuralgia which in their opinion presents an advance in treatment likely to lead to a reduction in the number of cases of disability. Theses should be submitted to the Secretary of the Society c/o The B.R.C.S. Clinic for Rheumatism, Peter Pan, London, N.W.1, before December 25, 1942.

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Journal of the Royal Naval Medical Service.

Articles.

VAPOURS AND DYSPEPTIC FEELINGS

By Surgeon Commander R. W. MUSSEN, R.N.

One of the most difficult problems of Service Medicine is the perennial one of the disposal of the individual with dyspeptic symptoms, who there are no demonstrable or complete nursing home. In the practice of a large Naval Hospital there [illegible] 30 per cent of cases of dyspepsia [illegible] within the last year.

While we will [illegible] [illegible] these patients and their [illegible] must be [illegible] in the presence of [illegible] [illegible] between the [illegible] stresses [illegible] different [illegible]

A certain proportion [illegible] pathological in the [illegible] other [illegible] history, the mental [illegible] possibly [illegible] the line of division between the [illegible] and [illegible] [illegible]

Opinion [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible] heredity [illegible] a lack of [illegible] Speaking generally the [illegible] a fairly useful [illegible] the community but these [illegible] appear to be independent personalities who have never been [illegible] of life. We can only speculate as to the various elements [illegible] make up this inherited [illegible] the form of parents [illegible] happiness or unhappiness and many other factors.

It seems that [illegible] aggravate their symptoms. One often hears the story [illegible] sleep all night and yet he might sniff will tell one [illegible] sleep soundly. With so much sympathy [illegible] and so much [illegible] hospital the symptoms [illegible] be regular and doubtful [illegible] more definite and fixed. [illegible] crisis [illegible] but one cannot see the miserable [illegible] and [illegible] believing that they do suffer [illegible] unhappy. The [illegible] cheerless patient [illegible] them in the proper direction.

Alvarez believes that [illegible] and continuously than the patient with [illegible] well believe it. He remarks [illegible] that their failure to find any [illegible] say that there is no point [illegible] the dreadful [illegible] patient who is in the consulting [illegible] sympathetic and [illegible] doctor will nothing objective [illegible] his [illegible] However this may be experience shows us that we must [illegible] with sympathy and that listening is [illegible] as possible excluded any [illegible] disease by all the means [illegible] we should reassure the patient and return him to duty.

This is all very well but the patient [illegible] reassurance and often though he may show temporary improvement will soon be as miserable and inefficient as ever [illegible] complaints to his Medical Officer who will eventually send him back to the hospital where in the end for the good of the Service he will be invalided.

It is remarkable that in the last year there have been [illegible] epidemics in any large number of patients [illegible] from the [illegible] medical conditions that we have seen so much of the most prevalent disabilities usually in the form of rheumatic [illegible] which are usually of recent origin. Dr. J. L. Halliday [illegible] to the same phenomenon in 1938 pointing out that in spite of the falling death rate increasing height and weight of school children and other usually accepted signs of improvement in the public health the figures for chronic incapacity continued to rise year by year. He inferred that this must be due to an increase in psychosomatic illness or minor physical disabilities which were initiated or maintained by disturbances in the psychosomatic-endocrine system.

These cases are usually concealed under a variety of labels which describe localized or mechanistic faults only but are often perpetuated by a routine treatment in the form of perennial alkaline powders for dyspepsia physiotherapy for rheumatism and successive nasal operations for bronchitis. It

[illegible] It is important to suggest that every person suffering from a hypochondriac or dyspeptic is a case of psychoneurosis but it does seem that the health condition of a large number of persons bearing these labels is secondary to some psychoneurotic disturbance caused by events which represented deprivation, frustration, upset, strain or difficulty. If this had been properly handled in the first instance a large amount of chronic misery of the type which we are discussing would have been handled in the Service in the past in time.

It is important to note that, though these psychogenic factors may be very common, we do not in hospital at least see much neurotic dyspepsia of recent origin and that these and most of the other psychosomatic conditions with which we now have to deal commenced during a period of relative prosperity prior to the war. This is partly due to the fact that there is most little time for the communication of a person's misfortune to a sympathetic exhibition of much sympathy for the sufferer on the part of his family or friends. It may be also that in spite of the dullness and emptiness of life in wartime, for many there is also zest, adventure, optimism and enthusiasm, change and variance and open air exercise, all of which tend to improve the efficiency of the potential neurotic.

Although we must make a certain amount of allowance for the conditions of a decade or more, we must look on the matter as a time perspective. In 1841 when the complaint was quite common, the American physician Dr. A. Flint noticed that dyspepsia might be divided into three groups according to the social or economic status of the individual. Among the poor it was related to overpressure, bad food, sedentary occupations and exposure, and in the rich to the abuse of luxuries and lack of exercise. In the middle class, however, between these two extremes, who did not lack the comforts of life and who did not indulge in luxurious excess, dyspepsia was a common but very distressing and persistent. The symptoms of the poor person were relieved by holidays and the luxuries men imported at the time were clothed and fed. The rich man's health and spirits improved when he travelled, his pleasures took from excess and engaged in healthy exercise. The middle class however, who had no excesses to cut out, all can do is to clothed and fed, could not get rid of the difficulties which he was then pursued.

Dr. Flint thought that many of these cases were psychogenic in origin, and he stated the three results from the unusual conditions in which they were placed. He regards the exercise of the various faculties and powers of [illegible] as an antidote to the correspondent harmony in the natural [illegible] and enjoyment of life. In this however he included the [illegible] with [illegible] to be realizing that in most persons the affections and emotions and the aims of the individual predominate over [illegible] the intellect, and that such results followed from their disturbance [illegible].

All this [illegible] from a change of a hundred years ago, [illegible] that [illegible] dyspepsia [illegible] might be included in the middle [illegible] mentioned by Dr. Flint and before that unstable temperament [illegible] beginning in the first [illegible] time, no important [illegible] [illegible] is probable that the [illegible] [illegible]

[illegible] enthusiasm and [illegible] [illegible] in the [illegible] [illegible] for the average market [illegible] [illegible] [illegible]

[illegible]

CRUSH OR COMPRESSION OF LIMBS WITH IMPAIRMENT OF VITAL FUNCTIONS

By [illegible] A. SHEPHERD, R.N.V.R.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Lewis (1941) described [illegible] large [illegible] The lard [illegible] Similarly [illegible] Lewis (1941) [illegible] Cuthbertson (1941) [illegible] Andren (1937) [illegible]

Certain [illegible] workers (1941) [illegible] cases [illegible] careful study of the [illegible] from [illegible] dysfunction they [illegible] clinical picture of a precision [illegible] in their opinion [illegible] centration and diminished CO_2 combining power [illegible] (Andren 1937).

The local lesion is considered in the following [illegible]

(1) Compression [illegible] venous stasis being probably most [illegible]

(2) Consequent capillary damage [illegible]

(3) Capillary damage with local [illegible] and chloride loss in damaged tissues [illegible]

(4) Swelling of accumulating plasma [illegible] tissue ischæmia

(5) Sudden release of compression when pressure is relieved and a slowing return of blood flow but this through a damaged capillary circulation

(c) [illegible] of plasma and its constituent proteins and cell [illegible] with [illegible] ischæmia

[illegible] cycle persists there is a decrease in blood volume [illegible] the damaged limb. If on the other hand the [illegible] be broken the more severe renal effects will [illegible]. Medical [illegible] during incisions appeared in the published [illegible]

[illegible] than the blood chemistry in these cases is not unlike [illegible] or in acute adrenal insufficiency of the [illegible] after adrenalectomy. Some evidence is adduced [illegible] adrenal extract.

[illegible] muscle removed by biopsy in this case [illegible] such necrosis suggestive of mural damage but rather fringe [illegible] in the fascial compartments.

Patey and Robertson (1941) adopting the theory that the syndrome is due to loss of plasma into the damaged tissue at the time of release of pressure applied an treatment [illegible]. Experiments of repeated limb [illegible] in the Porton [illegible]. The [illegible] in this way. No attempt is made to explain the renal failure [illegible] the syndrome apart from the [illegible] of the limits of the blood pressure and diminished blood volume. Then this time [illegible] improved. The damaged limbs did not [illegible] blood suggesting blocking of the circulation with [illegible] evidence of this mechanism [illegible] this theory in accord but [illegible] Thus further [illegible] plasma transfusion [illegible] would merely be lost in the injured limb. One of them survived [illegible] and died on the eleventh day of the disease *ex ipsa* the [illegible] complications develop. The other one was [illegible] the time [illegible] both of the affected is the leg.

[illegible] the early experimental findings a group of [illegible] August and October 1941 are worthy of study. All [illegible] and they [illegible] and stabilized [illegible] Henderson 1941, [illegible] and Murray 1941, Blackburn and [illegible] 1941, Maitland 1941.

Maitland states [illegible] the [illegible] of excessive protein albumin [illegible]. Renal [illegible] in [illegible] albumin [illegible] in dealing with the excessive quantities of the protein [illegible] protein metabolism from the damaged tissues. During prolonged dehydration and low blood pressure [illegible] congestive condition of the kidney from regular stasis and [illegible] anuria. This [illegible] condition is [illegible] methods which have proved successful in [illegible] lesions with anuria. Forced fluids and intravenous [illegible] alkaline were therefore employed [illegible] the case. Maitland [illegible] suggested that the sudden elevation of blood pressure which [illegible] in this [illegible] with rapid plasma transfusion may [illegible] the final and [illegible] of the renal failure.

Shrewsbury and others (1941) have [illegible] specific renal tubular [illegible] in a fatal case of the syndrome. [illegible] reason that phosphate and [illegible] are more likely [illegible] than hæmoglobin.

The above brief survey indicates the continued trend in the recognition

[illegible] of the condition. [illegible] crush syndrome [illegible] graphically to point [illegible] a fairly typical [illegible] but suffering originally [illegible] by different injuries. [illegible] to show the variety [illegible] histories.

Prolonged compression under heavy masonry. [illegible] collapsed building. Pinned under debris by right leg. [illegible] with debris with pressure on [illegible]. Left leg crushed against [illegible] in iron bedstead by heavy [illegible] girder. Buried under debris [illegible] impossible to move and difficult to [illegible].

It is in these three differences that will be produced by such diverse injuries I will examine an [illegible] by two cases personally observed in their early acute stage.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] cases is not likely [illegible] to [illegible] and the [illegible] g. myohæmoglobin is an unlikely factor [illegible] disturbance following enormous bomb spasm [illegible] have little external drainage seems rather against [illegible] from damaged muscle products. Skin damage [illegible] may be quite marked and might be suspected [illegible] analogous to that of burns. The severity [illegible] depends not only on the duration of compression but also [illegible] establishment of circulation is [illegible] prolonged anoxæmia. The necessity [illegible] circulations of other parts of the body [illegible] very long [illegible] diversion. Tourniquet must therefore [illegible] sudden and severe swelling in these limbs [illegible] release. Prevention of gross local lesion [illegible] Renal damage in such cases is not [illegible] factors, the degree of dehydration [illegible] the sudden loss of blood volume into the damaged [illegible]

[illegible] Injuries Due to Prolonged Pressure Forms a Part of the [illegible]

[illegible] it is likely that extrication will be difficult [illegible] in such cases a limb implies severe local trauma [illegible] The local effects of changes in the affected limb [illegible] outlined for Group I cases. The mind [illegible] enough in certain anatomical sites to cause contusion [illegible] and that the arterial spasm may be prolonged [illegible] and that this spasm may persist [illegible] Colton (1940 and 1941) has referred the [illegible]

In such [illegible] action of the compressing agent [illegible] and thereby to the dangers associated with the release of the [illegible] may be presented. These include the following: [illegible] damage to the blood supply of the limb [illegible] effects [illegible] tissues of the limb. [illegible] prolonged arterial [illegible] cases is associated with [illegible]

Renal [illegible] injury as in Group I but still [illegible] in this group.

Compression Involving Different Parts of Body

[illegible] difficult type of condition to define and treat. As in [illegible] lesions stage three of both Group I and Group II may be present. The prognostic picture is one of severe general [illegible] and the [illegible] type. No local lesion can be defined as the main [illegible] described below. Restriction of respiration is of importance in the [illegible] of the crisis. (This respiratory inefficiency may then be [illegible] by [illegible] of the lungs). In [illegible] the fatal outcome [illegible] respiration [illegible] in extreme anoxia. Conditions of acidosis from [illegible] and acute respiratory [illegible] have all been shown [illegible] to produce failure of the heart (Anderson 1937). This author has [illegible] demonstrated that urinary [illegible] proportion to alkali [illegible] may be of great significance in [illegible] groups of cases that absorption of nitrogenous œdema fluid [illegible] acidosis and associated renal failure. Miller (1940) has [illegible] this relevant experimental work.

Treatment.—It must be accepted that strict rules cannot be laid down for treatment of individual cases. Treatment is most likely to be [illegible] if the most prominent lesions are recognized and the probable complications foreseen. An approximate system of treatment can be [illegible] of the group into which the case falls.

In all cases during the period of painful conditions [illegible] should be given by mouth (if necessary by a long rubber tube and [illegible]) and should be part of the armamentarium of rescue parties. Any [illegible] fluid is suitable and alcohol should be avoided. If there [illegible] morphine injections must not be withheld but this is postponed [illegible] doses of ½ to 1 gr should be given. Extreme mental stress is [illegible] by omnopon ⅓ gr and scopolamine 1/100 gr and this is less [illegible] depression than with morphine. Encouragement is essential [illegible] the chances of extrication may at first seem [illegible]. In [illegible] is restricted every effort should be made to [illegible] patient is trapped.

In all types of compression sudden changes of position should be avoided. A gradual adoption of the recumbent or [illegible] position should be the rule as in such a position the patient [illegible] transported and subsequently treated in hospital. In Group I and II a gradual decompression of the limb must be [illegible] doubtful if conditions will ever allow replacement of the compressed [illegible] by immediate pressure of an elastic bandage but this should be [illegible] soon as practically possible in Group I cases. In Group II [illegible] gested that in cases of multiple sites e.g. the upper thigh [illegible] be applied above the constricting agent while the limb is [illegible] this should be released when a complete rubber [illegible] broadly applied up to the upper level. Such [illegible] the chances of sudden fluid loss into the limb with killing [illegible] and the dangerous sequelæ of events already outlined. The [illegible] should be elevated above the trunk. There must be no delay in applying [illegible] possible treatment and the patient must be [illegible]

[illegible]

[illegible] Sudden [illegible] to apathy [illegible] restless [illegible] stability [illegible] delirium. The occurrence of fainting [illegible] reaction has been noted (Bywaters and Beall 1941). The recognition [illegible] uremic effects need not be described here.

[illegible]—Sustained rise in pulse rate is of importance where haemorrhage [illegible] the injury is excluded and may be an early sign of development [illegible].

[illegible] Evaluation of this fall was the same rules as for wound [illegible] (Ricevi 1941). The normal blood pressure of the individual [illegible]. Hypotension may be a chronic pathological entity in [illegible]. By the same person and on the same instrument is [illegible] blood pressure may be sudden and have occurred before [illegible] and can may be gradual. In other cases it is often related [illegible] shelling. Where blood pressure is very low and [illegible] measures of resuscitation urgent measures may [illegible] the diminished blood volume which is associated [illegible] sustained high blood pressure is usually [illegible] period of low blood pressure has persisted [illegible] function has been impaired seriously.

[illegible] Increase in respiratory rate usually runs parallel [illegible]. The additional factors of blast lung lesions or fat [illegible] considered in these cases. Cyanosis and extreme pallor [illegible] and considered in relation to other signs. Early changes [illegible] may be uremic effects and are readily recognized as such.

Renal [illegible]—In all cases the urinary output must be measured and balanced [illegible]. Most air raid casualties pass very little urine in the first thirty [illegible] after injury. This may be due to nervous causes [illegible] as extension to dehydration or even to psychogenic factors. The first [illegible] by signs such as dry tongue and an estimation of the [illegible]. If this is the second excluded by catheterization in the first [illegible] and again at the end of thirty six hours. Oliguria [illegible] persisting must be considered in the due [illegible] full development of the syndrome. Every [illegible] for abnormal constituents. Of important [illegible] albumin and sugar. More detailed analysis [illegible] conditions allow but general examinations [illegible] early reveal any renal involvement and indicate regression [illegible] in support of treatment.

Local Condition—The affected limb or limbs must be examined frequently. Elaborate or intimate methods of estimation of limb volume have been described and tonometric readings are advocated as a check against deficiency (Tracey 1940). These are all excellent but a serial pressure chart should always be used when venous stasis is being considered under given circumstances. One should be content to record all skin changes with regard to colour and gross temperature of the limb, oedema and blistering. The only necessary measurements of the circumference of the limb must be made. Considerably more serious changes must be looked for in muscles. Oedema may be such that it is difficult to detect pulsation in muscle tissue, but this does not always mean that circulation is precarious. Observation of capillary flow in the nail beds is a useful help in such cases. Oedema may be variable in the early and frequently it is extreme tense oedema in the deeper tissues is of great importance.

The close observation of such signs may eliminate local muscle oedema, but it must be noted that local pitting has been of little value, and swelling was not particularly gross.

The six groups of signs noted above have been means of classifying the emergency proposed for these cases. Nothing, of course, is gained by [illegible] of biochemical investigation which could be profitable and which might influence treatment of painful cases. If there is demonstrable ischaemia, the limb devotes itself day and night to a typical case, the most difficult planning should be made and the patient usually such case in recent at a time when the resources of a special vascular clinic must. The other laboratory investigations are usually possible and should be done. In the early stages of treatment some method of estimating blood volume in its simplest form by serial haemoglobin readings—should be available. In the later stages blood urea estimations may be of [illegible].

Local Treatment of Group I Cases—In this type of case danger is due to prolonged ischaemia of the limb. This may cause marked local effects. The danger in the time of extremity has been noted and suggestions have been made to avoid acute swelling. Elevation of the limb combined with gradual release of the supporting bandage should result in a gradual return of circulation. Immediate release of a skin tight pressure has been suggested and utilized by Tinney in cases where blood pressure is low and limb circulation appears reasonably adequate. But if there is impairment in cases where blood pressure becomes low or the circulation is grossly impaired. Amputation has not hitherto proved successful in repair cases in this country. Active surgical intervention is not called for unless there is definite and extreme tenseness of muscle compartments. In such cases multiple tension relieving incisions are indicated. Subcutaneous haemorrhage does not call for such procedure. There is probably no better conservative treatment in these cases.

It is doubtful if in the acute stages of treatment peripheral oedema can be reduced by concentrated serum given intravenously. The evidence in favour of this is inconclusive although possibly is useful in Case I.

Oxygen therapy is well worth trying in the early stages of treatment. It is even a slight increase in concentration may help to counteract the local anoxaemic effects.

Local Treatment of Group II Cases—The same indications for treatment

[illegible]

[illegible] *III Test.* — The fingers [illegible] and pulmonary low blood pressure. [illegible] Where blood pressure [illegible] is reduced excessively. The [illegible] 50 mm. Hg. It must not be [illegible] blood pressure. Upset is divertisms in immunity [illegible] the heart. If the circulation is impaired [illegible] cannot be maintained by general methods of [illegible] and vasoconstriction must be adopted in [illegible] should be tested for cases where there [illegible] diminished blood volume, it may be [illegible] general hypotonia is suspected in [illegible] cases where local [illegible] hypotonia is suspected in [illegible] the [illegible] the shock [illegible] by [illegible]

[illegible] Hessen and Hessen (quoted [illegible] Hessen and quoted [illegible] interest [illegible] expenditure. [illegible] Period failure [illegible] Whenever [illegible] is to be furnished by [illegible] Blood [illegible] Special [illegible] the [illegible] Report [illegible] the effect [illegible] Report [illegible] Period [illegible]

[illegible]

[illegible]

After [illegible] All [illegible] impression [illegible] resistance is [illegible] A surprising [illegible] impingement [illegible] discovered [illegible] stimulation [illegible]

Chief [illegible] and spinal [illegible]

Repair [illegible] more satisfactory [illegible] of the injury. [illegible] private treatment [illegible] syndrome [illegible] attempt is [illegible] is full [illegible] reference [illegible]

A [illegible]

[illegible]

Gran [illegible] (1941) *Brit* [illegible] 238
Hey [illegible]
Hey [illegible] *Brand* 31, 279
J [illegible] 45 (1941)
L [illegible] (1941) *Lancet* [illegible] 158
Matthews [illegible] 446.
Mayne [illegible] (1941) *Brit* [illegible]
M R C [illegible] Injuries Dermal (1941) *Ibid* [illegible]
Miller [illegible]
Perry [illegible] (1941) *Lancet* [illegible] 780
[illegible] *Aug Nav Med Serv* 27 [illegible]
[illegible] *Brit Journ* [illegible] 469

Postscript

[illegible] and Rahn [illegible] described a suitable clamp [illegible] compressed limbs. The mode of [illegible] introduced (Perry [illegible] and Robertson [illegible] (1942) *Royal Naval Medical Journal* 2, [illegible]). The use of such a bandage will [illegible] local and general local conditions and it should be applied [illegible] possible injurious and regulatory failure in the limb.

THE MORE RECENT ADDITIONS TO OUR KNOWLEDGE OF THE EFFECTS OF COMPRESSION AND DECOMPRESSION ON MAN AND THE APPLICATION OF THIS KNOWLEDGE TO THE PRACTICAL PROBLEMS CONNECTED WITH HIGH FLYING AND DEEP DIVING[1]

By Steffen Chrisensen, Captain, R.N.

Nitrogen Narcosis

[illegible] can be compressed in air [illegible] physiological effect. During the strong [illegible] Sponge [illegible] is found (Behnke and Willman 1939) [illegible] divers working at 240 ft. depth in sea water [illegible] similar to those of some alcoholism. Behnke and Willman [illegible] this effect was caused by an excess of nitrogen [illegible] abolished and the men were enabled [illegible] these great depths when a 25 per cent. oxygen [illegible] mixture was supplied and breathed as a substitute [illegible] oxygen is little in physiological effect [illegible] with the exception that it causes the voice to become [illegible] in pitch. This is thought to be due to the lower [illegible] mixture is compared with air but Behnke and Willman [illegible] when it was breathed under a press [illegible] the voice still retained these characteristics.

[illegible] the first experimental observation such as [illegible] and even apparent loss of consciousness [illegible] 200 ft. These observers however

[illegible] Lucy [illegible] Medical [illegible]

[illegible]

[illegible] when he is compressed in air at pressures in excess of [illegible] atmospheres (Behnke, [illegible] and Motley 1935) or 100 ft. depth in sea water. The effect in [illegible] from a feeling of drowsiness [illegible] and mental [illegible] when compressed [illegible] lost. The [illegible] of the symptoms [illegible] depends upon the [illegible] to which the subject is exposed but it is known that the [illegible] the air is removed by [illegible].

Haldane and Case (1934*a*) have confirmed Behnke's [illegible] that inert gas pressure at 23 mm. Hg. for carbon dioxide, which has all the other little physiological effect in air at normal pressure, produces quite alarming symptoms in air pressures of eight to ten atmospheres. Behnke and Wilson attribute the additive effect of carbon dioxide to the dilatation of the cerebral vessels which is known (Cobb, Eddy and Lennox 1935) to be caused when this gas is inspired, thus leading to a more rapid and greater diffusion of nitrogen into the brain substance.

Haldane and Case (1934*a*) note that the symptoms when they do appear reach their maximum intensity very quickly within three minutes of their onset and that they passed off as quickly on decompression or if the air being breathed is replaced by 21 per cent. oxygen to 80 per cent. helium mixture. They also found that alcohol had an effect in increasing the symptoms in the presence of pure air but no additional additive effect in air mixed with CO_2. Thus this [illegible] (Haldane and Case 1934*b*) also seem, that in 85 per cent. of the subjects they examined complaints of a harsh taste in the mouth when breathing air at eight to ten atmospheres pressure. This [illegible] established when the air was replaced by helium oxygen mixture. It is noticed they [illegible] that the taste experienced must be due to nitrogen and that the [illegible] threshold for nitrogen is between eight atmospheres.

Caisson Disease or Decompression Illness

The term "compressed air illness" is something of a misnomer for the actual cause of the trouble is decompression. For example, it is now known that a diver at sea level weighing about 10,000 ft. may develop symptoms very similar to those of divers. Ascending in an aircraft at 30,000 ft. from ground level corresponds to a 10 ft. reduction in pressure or from one atmosphere to quite an atmosphere. Both cases compare with that experienced by a diver ascending from a depth of 100 ft. to a mere inch to the surface. It will be seen that for divers and aviators the subject of this has not been compressed at all but decompressed, and for this reason the term "decompression illness" is being generally adopted in this country to replace the old term. The American Navy, however, prefers to call it "caisson disease" or "compressed air illness" to distinguish between illness resulting from decompression from pressures in excess of one atmosphere and those resulting from decompression from pressures less than one atmosphere, such as they have found in their aviation medicine.

[illegible]

[illegible]

[illegible]

[illegible] the impression [illegible] the diver before surfacing. His use [illegible] of a 25 per cent oxygen [illegible] per cent helium mixture during the U.S.S. *Squalus* salvage [illegible] confirmed these findings (Behnke and Willman 1939) but its [illegible] seem to be that it allows divers to [illegible] with [illegible] depths which is impossible with [illegible] when the partial pressure of the [illegible] is lowered. Behnke and Yarborough attribute the narcotic [illegible] to nitrogen [illegible] solubility from 5.24 l. and calculated [illegible] 800 ft. [illegible] the depth at which a diver using [illegible] helium [illegible] should show [illegible] 1.080 ft. [illegible] symptoms from helium [illegible]. In support of this [illegible] is worthy of note that divers [illegible] 420 ft. (Lad 1928) and 510 ft. (Behnke and Yarborough 1938) [illegible] without any apparent ill effect on the [illegible].

[illegible] the effectiveness of helium in reducing the time [illegible] decompression and therefore the incidence of bends. Haldane [illegible] bends in [illegible] using helium oxygen mixture [illegible] helium is used although decompressed in the same [illegible] (Haldane and Case 1941a). Behnke and Willman (1939) [illegible] they were enabled by using helium oxygen mixture [illegible] divers safely to the surface in Hygen [illegible] the 80, 60 and 50 ft. levels after they had been [illegible] at a depth of 240 ft. On reaching the surface the [illegible] to a decompression chamber recompressed to the 60 ft. level and decompression completed with the use of oxygen in forty five minutes.

Possibilities of Compressed Air Diving

The method of [illegible] decompression in air was evolved with the principles laid down by Boycott, Damant and Haldane (1908). The breathing of oxygen from the 70 ft. level [illegible] to divers in the mechanical diving [illegible] the Davis Submarine and Decompression Chamber (Davis 1935) have all [illegible] the dangerous and dangerous illness. Hence [illegible] oxygen [illegible] increase the partial pressure of the dissolved nitrogen [illegible] and allows the blood to get rid of its nitrogen [illegible] more rapidly and therefore more rapidly can be fully [illegible] in the report of Jones (1940) on the construction of the New York Caisson [illegible] Oxygen [illegible] when breathed under pressure [illegible] (Barkin Johnson Poppen and Motley 1935) [illegible] decompression until the 60 ft. level [illegible] The Davis Submerged Decompression Chamber [illegible] inside is lowered into the water to the 60 ft. level. The diver [illegible] by stages and enters the bell [illegible] from [illegible]. The door is prevented from entering the bell by [illegible] pressure [illegible] sphere [illegible]. As soon as the diver enters the [illegible] he removes his helmet and when he is safely inside the chamber the boat is [illegible] and the chamber hoisted on board the attendant vessel. The diver may

[illegible] with the use of [illegible] the [illegible] and [illegible] the [illegible] and [illegible] oxygen [illegible] to [illegible] the time required for decompression [illegible] It also reduces the risk of nitrogen [illegible] found the amount dissolved possible which may be [illegible] air seas are running, in which the diver is very cold. [illegible] use of helium-oxygen mixture might offer an alternative [illegible] pure oxygen for decompression with the added advantage [illegible] used at pressures where oxygen is known to be toxic. The [illegible] effect of helium used for this purpose is however still in [illegible] experimental work is required before it can be [illegible] assessed.

Once bends have developed the main modalities [illegible] immediate recompression, the administration of oxygen [illegible] and the exhibition of alkalis. The most important of these [illegible] and prolonged this is resorted to at once or at least [illegible] the cure of most cases. The longer it is kept in [illegible] the more difficult will be the treatment (Lesser 1940). [illegible] oxygen during decompression treatment is best administered by [illegible] B.L.B. apparatus (Boothby, Lovelace and Cornell 1939). [illegible] during decompression treatment is a sound idea [illegible] most authorities prefering their own special methods. [illegible] however to record the interesting suggestion of Yoshimura and Bohnki (1949) in this respect for their method seems [illegible] in the treatment of this condition. Their suggestion [illegible] be applied to one atmosphere but the local [illegible] that the minimum pressure [illegible] than [illegible] and not more than six atmospheres. At the minimum [illegible] method a stay of thirty minutes is [illegible] minutes. The therapeutic recompression [illegible] the 60 ft. level to three atmospheres absolute [illegible] per minute. Oxygen inhalation is begun at the 60 ft. level and [illegible] a half hours during which period the [illegible] atmospheric pressure prevails.

For cases which have developed [illegible] the administration of 10 per cent glucose intravenously [illegible] together with lumbar puncture has [illegible] authorities. This is of interest as it has been [illegible] that during decompression there is a 400 per cent [illegible] in the cerebrospinal fluid due to the expansion of the dissolved gases. It is known that the administration of hypertonic glucose [illegible] pressure, and for this purpose Rinehart (1932) has [illegible] in the treatment of meningeal [illegible].

Prophylaxis and Treatment of Anoxia

Theoretically it should be possible to [illegible] of oxygen [illegible] an air pilot at ground level of 95 per cent of his nitrogen [illegible]

[illegible]

[illegible]

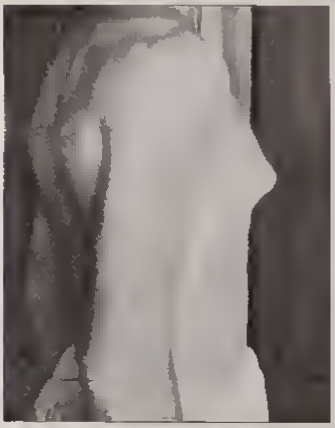
[illegible] MAMMARY HYPERTROPHY

[illegible] W. C. [illegible]

[illegible] interest in which the gland tend [illegible] the function of the female [illegible] and the enlargement is [illegible] hypertrophy (10) cases in [illegible] characteristics [illegible] and the amphigenism [illegible] [illegible] and summarizes [illegible] cases of gynecomastia [illegible] the genital [illegible] reference type [illegible] simple [illegible] [illegible] [illegible]

[illegible]

[illegible]



[illegible]

[illegible] graphs [illegible]

[illegible]

[illegible]

[illegible]

[illegible] Reddy of the Madras Medical College, kindly [illegible] and has up to [illegible] letters.

[illegible]

[illegible]

[illegible]

[illegible]

collected 165 cases from the literature. It is not stated though it [illegible] group they belonged and it is almost certain that they were [illegible] or [illegible] groups. My own impression is that the frequency with which the condition is seen will depend on the conditions of service. In the hospitals and non-[illegible] training establishments we shall expect to see it from time to time. But for civilians such a will not be commonly met with in civil practice. [illegible] times.

Histology.—Examination of the normal male breast shows abundant fibrous tissue and no merely adipose tissue. It is presumably supposed that these elements are bedded in fibrous tissue [4].

A very full account of the histology of gynecomastia is given by Cheatle and Cuthbert who gave several authors. The terminal but slight [illegible] the outbud and the lactiferous sections from Case 1 confirm very exactly [illegible] these authors findings. Fulheim [5] sectioned fifteen mammary glands [illegible] in men with gynecomastia and in all there was hypertrophy of the lactiferous tissues, the connective tissue, as well as the glandular [illegible]. He found that the greatest increase was in the connective tissue [illegible] in lobule were present in the connective tissue. In the [illegible] portion the smaller ducts and terminal ducts and acini were [illegible] the larger ducts were not increased in number as a rule [illegible] epithelial tissue is increased not only by the increase [illegible] ducts and acini but also by the fact that the epithelium of [illegible] these ducts have often proliferated into several layers. He [illegible] says Fulheim resembled that of a breast of girl of 12 [illegible] but differed from it by the outer distension of the [illegible] ducts.

[illegible] these remarks are in the main true though [illegible] is not very marked. Many of the ducts however did [illegible] the acini in comparison to their formation and the epithelial proliferation [illegible] lumen of the ducts was most striking.

Aetiology.—In discussing the aetiology of gynecomastia [illegible] is needful [illegible] Let us first be on generalities and suppositions for it is easy [illegible] the simple particulars and aetiology. There is little doubt that the [illegible] type of gynecomastia is of hormonal origin. The hormone [illegible] example. I cannot consider attributing to secretion with testicular [illegible] and disease with possible enlargement and with [illegible] or some rare adrenal cortical tumours [2]. The [illegible] hormonal aspect is almost certainly the most [illegible]. This is undisputed although it is more difficult [illegible] Probably as Fulheim says [illegible] and we must accept it as such.

[illegible] exceptions implicated gynecomastia [illegible] examples of unilateral evidence [illegible] from repeated.

[illegible] with the simple type of gynecomastia [illegible] and be referring to some or any [illegible] still [illegible] established facts [illegible].

[illegible] the lowest rank of mammals the Monotremata [illegible] show essentially the same

development [illegible] that although the summary gland is peculiar to [illegible] particular form of certain [illegible] glands [illegible] in some instances it is perhaps the [illegible] [illegible] material secretion.

From the experimental point [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

The type of operation [illegible] comparatively unimportant. [illegible] the breast and nipple [illegible] in many of these cases the [illegible] Lecture [illegible] little more trouble [illegible] parallel incision [illegible] the nipple intact. The cicatrix [illegible] follows this. Gaillard [illegible] incision when used on women [illegible] been observed in these cases. Although at first there may be some [illegible] of the nipple in the early post-operative days this soon resolves [illegible] becomes quite undistinguishable [illegible] months.

Summary

Three cases of simple gynecomastia are described. A short [illegible] is given on the incidence and etiology of the condition. There [illegible] on the treatment.

[illegible]

[illegible]

[illegible]

[illegible]

Report on Case of Scabies

[illegible]

Rank [illegible] Name [illegible]

[illegible] Regt [illegible] Medical Sta[illegible]

[illegible] Y N If w[illegible] [illegible]

Soldier [illegible]

Bulletin [illegible]

Last p[illegible] When sp[illegible]

Date reported sick — Number of days since onset —

PART II

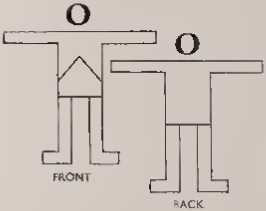
Contribution to admission

Lymphatic involvement

TREATMENT

Stage N I II III IV

Date Treatment



PART III

Date to M O [illegible]

Dermatitis of arms
legs
trunk

Dermatitis treatment

Date discharged

SUMMARY

1 Month Standard D N
First attack
2 [illegible] or more attacks
3 Source known presumed
New entry
Days since last
[illegible]

8 Arms
9 Legs
10 Trunk
11 Dermatitis
12 Days treatment [illegible]
13 Days [illegible]
14 Serial No

Serial No.

FIG. 1. REPORT IN CASE OF SCABIES

Some explanatory remarks may be helpful

(1) Permanent Service/HO HO stands for Hostilities only and includes both conscripts and volunteers

(5) [illegible] — [illegible]

(6) [illegible] — [illegible]

(7) [illegible] — [illegible]

(8) [illegible] — [illegible] arrival [illegible] home [illegible]

(9) [illegible] — [illegible] here.

A [illegible] Unfortunately [illegible] treated by Series IV [illegible]

Selection of Cases. — All [illegible] Diagnosis of scabies were [illegible] well as [illegible] in routine examinations of new inmates or other [illegible]

Method of Treatment

Series I.—This was the [illegible] employed [illegible] method. The routine employed was as follows:

(1) Sapo Mollis (B.P.) applied [illegible] the body except the face and hair.

(2) Immersion in a hot bath [illegible] rubbed in well.

(3) Lotion applied while [illegible] bath [illegible] finish for five minutes and allowed to dry.

(4) Lotion re-applied and [illegible] dry.

(5) Body gently dabbed with [illegible]

(6) Change of clothes. Isolation for [illegible] followed by a repetition of the above treatment. Patient discharged [illegible] lesions appeared cured.

Lotion. Benzyl benzoate [illegible] part, isopropyl [illegible] part.

[illegible]

[illegible]

| [illegible] | [illegible] | [illegible] |

Series II—[illegible] is the same as the [illegible] but scrub were not [illegible] but bath with [illegible] being substituted

Lotion Oleic acid 1 part saponified [illegible] KOH 1 part saponified benzyl benzoate 2 parts industrial S V M 2 parts

Series III—As for Series II but commercial salt soap [illegible] of the B P product

Lotion Benzyl benzoate 1 part industrial S V M 1 part

Series IV—Routine as for Series II and III

Lotion Benzyl benzoate 1 part surgical liquid soap [illegible] 1 part

Dermatitis unless of a special type (such as balanitis) was in all cases treated by the application of lot calamine twice daily with dry dressings if necessary

TABLE 3

SERIES II CASES

No.	Age	Marital status	Number	Caste	Source	Permanent service (P) Seasonal work (S) Not employed (N)	No. of baths week	No.	Days since last contact on calamine	Generalized (G) Arms A Legs L Trunk T	Days treatment	Dermatitis of A	Lot P	Days dermatitis treatment	Remarks
33	17	N	1			I		7	3	M	1	M	N		
34	4	N	1	Bi Ho s.		I		4	2	I	1	M	4		
35	18	N				HO I	3	1		M	1				[illegible]
36	4	N	1			HO NI	2	11		I	1				
37	11	N				HO NI	2	1		N	1				
38	11	N	1			I		1		N*	1	*	10	*La [illegible]	
39	18	N	1			H		1	1	I	1				

TABLE 4

SERIES III CASES

No.	Age	Marital status	Number	Caste	Source	Permanent service (P) Seasonal work (S) Not employed (N)	No. of baths week	No.	Days since last contact on calamine	Generalized (G) Arms A Legs L Trunk T	Days treatment	Dermatitis of A	Lot P	Days dermatitis treatment	Remarks
41		N	1			I	3	90		I	1				
53	17	H		Bi Ho s.		H	4	41		I	1				
54	14	N	1	[illegible]		HO NI	7	64		I					
55	1	N	1		*	HO	2	31		I	1				*A [illegible]
56	19	N	1			H NI	3	45		I	1				
57	19	N	1			HO		11		M					
58	20	N	1	Ba [illegible]		I	4	7		M	4				
59	20	N				H	1	3		M	1				[illegible]
60	19	N	1			HO NI	1	1		M	1				
61	19	N	1			H NI	2	1		M	4				
62	28	N			*	HO	2	2		M	2				*Ma [illegible]
63	20	N	4		*	H		7		I	1				*A [illegible]
															*A [illegible]
64	35	N	1			I		1		G					
65	34	N	1	Ban [illegible]		H	1			I					
66	19	N	1			HO	1			M	4				
67	20	N	1			H	1	3		I					

TABLE 5

SERIES IV CASE

No.	Age	Marital status	Number	Caste	Source	Permanent service (P) Seasonal work (S) Not employed (N)	No. of baths week	No.	Days since last contact on calamine	Generalized (G) Arms A Legs L Trunk T	Days treatment	Dermatitis of A	Lot P	Days dermatitis treatment	Remarks
78	20	N	1	Bi [illegible]		HO NI		14							

[illegible] following points emerge.

[illegible] most cases of [illegible] found [illegible] preventive measures [illegible]

[illegible] stand [illegible] reported [illegible] that [illegible] stopped [illegible] took over during day [illegible] required [illegible]

[illegible] per week being [illegible]

[illegible] Series III showed [illegible] in all [illegible] cases. Series I did [illegible] Series III [illegible]

[illegible] Series III under [illegible] treated by [illegible] suffered by [illegible] *(b)* [illegible]

[illegible]

DISCUSSION FROM THE MEDICAL ASPECT

[illegible] R. R. HEWITT, [illegible]

[illegible]

[illegible]

[

[illegible]

[illegible]

[illegible]

[illegible] of new [illegible] including the [illegible] their [illegible]

[illegible]

[illegible] offenders [illegible] been [illegible]

[illegible]

[illegible] Medical Officer [illegible] and no more. Offenders [illegible] and free [illegible] well nourished [illegible] hyperemia [illegible] further punishment [illegible] the MHS [illegible] 42 others [illegible] diseases [illegible] officer [illegible]

—

THE MANAGEMENT AND TREATMENT OF EARLY SYPHILIS IN H.M. SHIPS

By Commander S. J. WHEELER, R.N.

[illegible] syphilis cannot be carried out efficiently [illegible] complications and errors. This essay [illegible] which tend to make the chances of success [illegible]

[illegible] Prevention of Treatment and [illegible]

[illegible] early syphilis should follow a known [illegible] the chief [illegible] syphilis [illegible] Medical [illegible] Commissions [illegible] weeks [illegible] Terms this [illegible] treatment is required in [illegible] treatment [illegible] Many [illegible] dependent on the [illegible] to keep himself [illegible] he must keep [illegible]

[illegible] explained [illegible] the second [illegible] all [illegible]

[illegible] explained [illegible] all [illegible] Medical [illegible] be [illegible] explained [illegible] under [illegible] [illegible]

[illegible] [illegible] syphilis [illegible]

[illegible] [illegible] Western [illegible] [illegible] [illegible]

[illegible] that [illegible] abnormalities antedate the appearance of [illegible] damage in the nervous system by many years. The potential [illegible] in these patients are curtailable within the first year of infection [illegible] fifteen years but that irreparable harm may already have been done. (Moser)

[illegible] in general paralysis is a tragedy of inadequate early [illegible] and no such case should ever occur if early treatment is properly [illegible]. The spinal fluid should be examined after six months treatment. [illegible] will show in many those patients who are candidates [illegible] syphilis of the nervous system. The fluid should be examined again [illegible] treatment. This will show those who have reverted to normal [illegible] incidentally with treatment and who require further [illegible]. And it will show those who are persistently abnormal. [illegible] the people who will develop tabes or general paralysis if left [illegible] which in the majority of cases can be prevented by further [illegible]. It should be noted here that an abnormal spinal period [illegible] necessarily accompanied by a positive blood reaction. It [illegible] to say anything on the subject of the fluid or the possibilities [illegible] syphilis of the nervous system [illegible] examined. A succession of negative bloods will not [illegible]. Their personal experience of this in a patient who [illegible] syphilis for routine investigation of the spinal fluid. [illegible] amount for eight years and the blood had been negative [illegible] of N.A.B. The fluid showed maximal changes. [illegible] should be explained to the patient and my experience [illegible] should be placed in the care of the Medical Officer [illegible] is explained. [illegible] patients [illegible] the physical [illegible] prominent. [illegible] improvement [illegible] following like [illegible]. It has been found better [illegible] (see [illegible] list.)

(iii) [illegible] teeth [illegible] (b) general physical [illegible]

(a) [illegible] Bad teeth [illegible] other inflammatory causes of intermittent [illegible] in the [illegible] teeth and [illegible] scrupulously clean. It is [illegible] important that dental treatment if necessary should start [illegible] syphilis. [illegible] the teeth and gums [illegible] healthy [illegible] not [illegible] occur. Rather often [illegible] pain and bleeding from the gums and teeth are the first complaints [illegible] of the teeth healthy. The case of the [illegible] and gums provides a particularly good example of an lesion in the [illegible] syphilis [illegible] at its weakest point. Success [illegible] depends on the physical [illegible] and finding potentially [illegible] strengthening [illegible] when they are subjected to strain [illegible]. The [illegible] of the disease [illegible] and with the [illegible] of N.A.B. [illegible] the point begins there.

(b) Urine. The [illegible] of the urine [illegible] contrary indication to the [illegible] of [illegible] syphilis is having. Albuminuria [illegible] is [illegible]. The presence of [illegible] is [illegible]. When syphilitic [illegible] complicated by [illegible]

[illegible] unsuspecting [illegible] and [illegible] (Mason). But [illegible] ground [illegible] provide [illegible] the property [illegible] to someone with [illegible] disease is [illegible] important to put [illegible] examination [illegible] nervous system [illegible] under [illegible] secured with what [illegible] may be compared.

II.—*Preparation* [illegible] Patients (*b*) the Donor.

(*a*) *The Patient.* [illegible] with a full statement [illegible] N.A.B. He may [illegible] crisis. Once the [illegible] injection of the [illegible] The only really bad [illegible] who subsequently [illegible] morning [illegible] complete [illegible] pressure began [illegible] was given a small [illegible] without difficulty [illegible] only [illegible] the [illegible] hospital [illegible] in this respect. [illegible] those [illegible] should [illegible] deception.

(*b*) *The Donor.* [illegible] N.A.B. [illegible]

(i) The N.A.B. [illegible] N.A.B. [illegible] non-donor [illegible] N.A.B. [illegible] to deep sedation [illegible] the property of N.A.B.

(ii) The [illegible] the [illegible] is crucial that the N.A.B. [illegible] [illegible] hospital [illegible] [illegible]

[illegible]

[illegible]

(c) The [illegible] impurities in the water used [illegible] N.A.B. Stale [illegible] though boiled in the morning [illegible] [illegible] containing the dead bodies [illegible] [illegible] pressure in the sick bay and it is not improbable [illegible] result from its use. Unfortunately the water [illegible] glass. This cannot be [illegible] any distilled water in compounds which [illegible] [illegible] and [illegible] in their boiling.

III. *The Necessary Equipment. Technique of Injection.*—(*a*) The [illegible] (*b*) [illegible] (*c*) [illegible] (*d*) emergency restoratives.

(*a*) *Equipment.* (*i*) *Needles.*—Some patients though adequately prepared [illegible] merely from the thought of the prick [illegible] injections made with the patient sitting, or [illegible] [illegible] results. This has three results. The [illegible] himself [illegible] and makes a bad impression on the [illegible] patient. Therefore [illegible] all injections lying down. Should [illegible] the patient be placed in the best position for treatment [illegible].

(*ii*) *The Kind of Injection.*—Any intravenous injection should be given [illegible] N.A.B. A [illegible] by the injection of normal saline or green [illegible] in the injection of any very cold solution [illegible]. The rate of delivery can be very easily controlled by giving [illegible] of a [illegible] drop in three to five seconds. This rate will do no harm [illegible] than this will blow the needle off the syringe. With [illegible] needle it is very easy to give 10 c.c. [illegible] increases enormously the risk of side effects. There are [illegible] points in favour of using small needles. In giving [illegible] with the small thin and almost invisible [illegible] will have to be used for the larger one will be [illegible] [illegible] is likely. If the operator [illegible] technique of intravenous injection with a hypodermic [illegible] success is correspondingly greater. In short use a [illegible] will give the greatest chance of success when [illegible] [illegible]. An intramuscular injection in an emergency [illegible] Normally small needles hurt less. This is [illegible] when the nurse is planned in minutes upwards of forty [illegible].

[illegible]

[illegible]

(1) [illegible]

(2) [illegible]

(3) [illegible]

(4) [illegible]

(5) [illegible]

(6) [illegible]

(7) [illegible]

(8) [illegible]

(9) [illegible]

(10) [illegible]

(11) [illegible]

(12) [illegible]

(13) [illegible]

(14) [illegible]

(15) [illegible]

(16) [illegible]

(17) [illegible]

(18) [illegible]

(19) [illegible]

(20) [illegible]

[illegible] the duties of the Medical Officer [illegible] P.P. [illegible] progress in [illegible] recovery on by reason of [illegible] Men are frequently [illegible] [illegible] offender has been [illegible] [illegible]

The food issued and consumed [illegible] is excellent but the time [illegible] and meat [illegible] dinner of thick stew—which [illegible] vegetables—potatoes and bread and tea (there is [illegible] milk bread and skim milk). On Sundays the stew [illegible] suet pudding takes its place. The vegetables [illegible] but when fish or bones are not forthcoming dried [illegible] substituted. The total calorific value averages 3,400 [illegible] and 1,600 on Sundays; this is rather below the energy required [illegible] but more than adequate for those who have [illegible] About 48 per cent. of men on discharge have [illegible] anæmia or 18 per cent. have contracted scurvy [illegible] perhaps two or three pounds apiece. Bath [illegible] are available in the sick bay for those who use [illegible] soap and towels.

The [illegible] is in excellent institution by means [illegible] offender not only earns remission of his [illegible] as he goes along. Eight marks are allotted [illegible] and eight more for work done. Marks [illegible] for those who break the [illegible] last but the majority obtain full marks [illegible] the well behaved offender can earn [illegible] other letters each [illegible] As the cure of a mouth has good cases [illegible] and sew their silks to mark them [illegible] employed in the galley or work [illegible] A long-serving seaman science [illegible] long drills although he gains his [illegible] and [illegible] Stagnation and [illegible] are [illegible] in the [illegible]

[illegible] in his room each evening [illegible] of [illegible] marks of serving can is [illegible] completed each which continues [illegible]

[illegible] Class No. [illegible] hard suits [illegible] games [illegible] Epileptic and dementia is [illegible] in the sick bay [illegible] skin disease imported by [illegible]

[illegible]

[illegible]

[illegible]

The Dry Bones

[illegible]

The Merry Dominoes

[illegible]

[illegible] which by the [illegible] and therefore controlling the needle should [illegible] is in the vein the plunger is pressed with the [illegible] the needle is withdrawn in the usual manner. If [illegible] is not topped [illegible] the usual injection.

(*d*) *Dosage*. [illegible] the general health for all side effects. An injection [illegible] should be made weekly [illegible] should thus be [illegible] N A B is the agent.

IV.—*Treatment*. [illegible] *Treatment*. The treatment of such cases [illegible] phlebitis and the usual local measures [illegible] Sedatives [illegible] are helpful. Thus the patient [illegible]

(*a*) *Nitrid Dermatitis*. This is a toxic manifestation occurring about nine days after the first injection of N A B. It is characterized by a sudden onset of general malaise, fever headache sore throat pains in the back joint pains and [illegible] nausea vomiting or diarrhœa. A rash appears next day which may be [illegible] morbilliform and has a blotchy distribution over the trunk and extremities. It usually fades in about forty-eight hours and a complete recovery is made. The only treatment necessary is rest but in severe cases the drug should at least a month. If earlier attempts are made [illegible] will [illegible] Bismuth can be continued.

(*b*) *Arsenical Jaundice*. When [illegible] the analogy of jaundice occurring during the arsenical treatment of syphilis and it is in much dispute—the condition is [illegible] from catarrhal jaundice and in the great majority of cases [illegible] the same course. The arsenical treatment should be stopped [illegible] Hepatic. The arsenical should not be resumed until one month after all symptoms of jaundice have disappeared.

Dermatitis. Skin reactions to arsenicals may take any form from a [illegible] to a complete exfoliative dermatitis. It is well to remember that [illegible] reaction is often a manifestation of further N A B [illegible] may be produced. It is a safe rule that any skin [illegible] should be dealt with in the treatment should be viewed with [illegible] suspicion. Fortunately dangerous lesions usually [illegible] first [illegible] the flexor aspects of the arms. A pruritic [illegible] is [illegible] the greatest significance. In all these cases stop N A B and [illegible] patient. If circumstances are such that [illegible] be carried in a ship it should be transferred [illegible] the problem [illegible] of nursing. The limited assistance [illegible] a pruritic susceptible to infection especially if the [illegible] directed to making the patient comfortable. [illegible] oatmeal baths are very comforting, calamine lotion [illegible] ichthyol ointment will prevent the skin of the face from [illegible] care should be taken that any fissures which do occur in [illegible] allowed to go septic. Diet should be what the patient [illegible] and is hungry for, though this is a difficult problem at sea [illegible] shellfish which may produce skin reactions in healthy [illegible]

[illegible] dermatitis is an absolute contraindication to any [illegible] Prolonged administration of bismuth must be [illegible]

NOTES ON THE TREATMENT OF BACILLARY DYSENTERY

By Sergt. A. C. Gordon, D.C. Wilson, A.D.R.S.M.

[illegible] have been compiled as a result of the [illegible] and treatment of bacillary dysentery in the Middle East [illegible] and [illegible] to quickly clinical [illegible] which [illegible] in [illegible] dysentery [illegible] especially [illegible] and [illegible] difficulties [illegible].

Diagnosis.—In this series of cases diagnosis was based [illegible] the textbook symptoms of pyrexia, abdominal pain, [illegible] and bloody mucoid passage of blood and mucus [illegible] [illegible] the pain of [illegible] the descending [illegible] [illegible] marked in the left iliac fossa. This was [illegible] [illegible] and [illegible] and [illegible] with a pyrexia [illegible] [illegible] the [illegible] is much more [illegible] [illegible] [illegible] and signs of pyrexia and [illegible] [illegible] [illegible] and large numbers of pyogenic [illegible] [illegible] [illegible]

employed [illegible] and recovery should be complete in the ninth day.

The Medicinal Treatment.—The type of case treated when the infection is with *B. shiga* responded satisfactorily to sulphanylguanidin. In fact the results [illegible] this drug, compared with the previous treatment by sodium sulphate, were distinctly startling. When previously the stools were [illegible] might take [illegible] ten to [illegible] days to achieve a normal formed stool [illegible] with sulphanylguanidin the average time was reduced to [illegible] days. As the supply is still unlimited its use is restricted as far as possible [illegible] *Flexner*, but sulphate under these circumstances [illegible] that this was the specific treatment. The following is [illegible]

[illegible]

[illegible]

[

[illegible]

[illegible] diagnosis was made and 100 grm. 40,000 units [illegible] serum intramuscularly, and on morning for the [illegible] as happened in the majority of cases, the infection was [illegible] was saved in the condemning of toxaemia which we [illegible] infected by the other organisms of the group. Dehydration [illegible] was treated by a drip transfusion of 5 per cent. glucose [illegible] continued up to four pints if necessary. When the [illegible] our *B. shiga* and the condition of the patient appeared [illegible] serum up to 100,000 units was added to the drip. [illegible] peripheral circulation failure is evidenced by a systolic blood pressure below 100 mm. of mercury with grave pulse pressure [illegible] saline treatment.

General Management.—[illegible] and trained staff who are experienced in the nursing [illegible] who are interested in their treatment and are [illegible] together. Changes should be as infrequent as possible. [illegible] patient must be strictly isolated to bed and [illegible] for his management by using the screen on the [illegible] the daily number of stools is recorded (the [illegible] himself) and partly to patient's fresh seed being inspected [illegible] who will if necessary return to his bed for inspection by the Sister [illegible] officer as an individual of progress. Each patient [illegible] persuaded to think that a patient [illegible] urinary juice.

Diet in all stages is [illegible] additions being made according to progress. The [illegible] found to be a useful [illegible] for example it might be necessary [illegible] diet with the addition of fish [illegible] gradually [illegible] and the bill No. [illegible] recorded.

No. 0. Water (for [illegible]).
No. 1. Beef tea, barley water [illegible]
No. 2. Beef tea, jelly, barley water [illegible] orange juice, [illegible]
No. [illegible]. Fish (boiled or [illegible]), [illegible] rusk, [illegible]
No. 4. Chicken, [illegible] No. [illegible]
No. 5. Chicken, [illegible]
No. 6. [illegible]

During convalescence the most useful tonic, especially where weight has been lost, is iron, provided the stools are normal and fermentation extreme. If the haemoglobin content is reduced. Patients should be warned not to drink milk chocolate or doughnuts during convalescence, as these are likely to cause a recurrence of diarrhœa.

Complications and Sequelæ.—Since the advent of the sulphanylguanadin treatment the occurrence of complications has diminished considerably, but there are always the occasional case which either from unavoidable delay in commencing treatment or from virulent infection, had a stormy passage. Pain in the abdomen, a feature that can hardly be called a complication, and is rather colicky in continuous. In either type, tincture opii in a dose of 15 minims twice daily, is effective, and has no deleterious effect. In the rare cases of perforation, the sulphanylamide is being given, more opii by shooting per rectum, permits of greater concentration and more prolonged action in the large intestine.

Debilitation.—Transfusion either of glucose saline or plasma has already been recommended, but careful guide is the systolic blood pressure taken daily. If it falls below 100 it is a warning, and immediate measures.

Hæmorrhage.—A variant less of blood occurs in all cases, but in some few cases it may be so the continuous oozing may give rise to insidious anæmia, which in itself will retard recovery. If the red count falls below 4,000,000 and the haemoglobin below 70 per cent., whole blood transfusion is required. In three cases, the lesser of blood loss was so resistant to treatment that a splenectomy was performed in the hopes of reducing the tension in the portal system. The results were entirely successful. In the sixth case, a bleeding duodenal ulcer, that is, a typical ulcer, was partially controlled by this procedure, but is oozing continued, it was decided to perform a gastrectomy. In view of the fact that a sigmoid should be only partially resected, it was abandoned. This procedure was successful in stopping the bleeding, the patient made a good recovery, and it was learned that the effect of dysentery opening had been relieved.

Hernia.—This appeared to be due to deep ulceration into the muscular layer, in peritoneal involvement, and it was invariably a symptom of severe illness. In all the cases which died from perforation or developing into perforated. Three other cases in which it occurred, [illegible] N. 7 died with a hernia in [illegible] cases three daily, they were [illegible] in position and eventually recovered.

Perforation.—Three cases sustained perforation, and all three were fatal. [illegible] attempted in one case, but it is found in the appendicular stump by [illegible] recovered the gut was so friable that sutures would not hold. The only possible surgical measure would appear to be peritoneal [illegible] drainage in the Douglas position.

Intussusception.—In some cases during convalescence this reflex became [illegible] and stools were passed after every meal, much to the distress of the patient who felt that he was relapsing. This was controlled [illegible] by a minute containing laudanum ½ gr. and [illegible] taken three daily before meals.

Appendicitis.—All cases developing this complication eventually recovered [illegible] treatment applied in [illegible] minutes. Restricted massage

and Sterile [illegible] the only medicines [illegible] drugs were [illegible]

Bacteriophage [illegible] through the [illegible] with [illegible] rather this [illegible] my of the [illegible] had to be given. [illegible] is to the [illegible] in this series [illegible]

Results. [illegible] possible dysentery [illegible] infecting organism [illegible] though there [illegible] fatal one [illegible] to *B. Gaertner* [illegible] in the series [illegible] 3·5 per [illegible] causes of death [illegible] failure [illegible] 2 pneumonia [illegible]

Summary.—The treatment of bacillary dysentery [illegible] from the clinical aspect as the result of ten years experience in Alexandria.

The most satisfactory treatment is by means of sulphanylguanidine combined in severe cases with anti-dysenteric serum.

A suitable diet is outlined.

A brief summary of results is given.

I wish to thank Surgeon Lieutenant Commander [illegible] R.N.V.R., Major [illegible] R.A.M.C., and Captain [illegible] R.A.M.C. for their [illegible] labori[illegible] in the treatment of these cases.

ABNORMAL MENTAL STATES IN SURVIVORS WITH SPECIAL REFERENCE TO COLLECTIVE HALLUCINATIONS

By Surgeon Lieutenant Commander E. W. Anderson, R.N.V.R.

This paper is concerned with abnormal mental states occurring in survivors who in this particular instance had spent a period of approximately sixty-five hours in Carley floats after their ship was sunk. Collective visual sense deceptions were a prominent feature in these states. All the witnesses were men aged 20 to 39. The accounts were obtained approximately eight to twelve months after the incident. It was unfortunately impossible to interview all the survivors for various adequate reasons, and it is doubtful whether if this had been possible anything essential would have been gained. The ship in question was sunk on June 8, 1940. The signal "Abandon Ship" was given at 1800. The weather was said to have been fairly cold and there was a long sea with breaking tops. This sea continued for about twenty-four hours and then abated. As indicated below, the mortality on the floats was high, and the exhaustion of the men became so great that they were unable finally to jettison the dead. There were thirty-six survivors

[illegible] all [illegible] later. All the men were without [illegible] for the little time adrift.

(1) Sy[illegible] P.O. [illegible] 9

[illegible]

(2) S[illegible] X[illegible] 20

[illegible]

[illegible]

[illegible]

[illegible]

(4) A B (H.O.) [illegible]

[illegible]

(5) [illegible]

[illegible]

(6) [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

(7) Cpl. R. M. [illegible]

[illegible]

(10) A. B. [illegible]

[illegible]

[illegible]

[illegible]

(11) Mrs. [illegible] aged 27

[illegible]

[illegible]

Discussion

[illegible]

[illegible] No. 1 [illegible] No. 2 [illegible] No. 3 [illegible] No. 4 [illegible] No. 5 [illegible] No. 6 [illegible] No. 7 [illegible] No. 8 [illegible] No. 9 [illegible] No. 10 [illegible] No. 11 [illegible] No. 12 [illegible] No. 13 [illegible] No. 14 [illegible] No. 15 [illegible] No. 16 [illegible] No. 17 [illegible] No. 18 [illegible] No. 19 [illegible] No. 20 [illegible] No. 21 [illegible] No. 22 [illegible] No. 23 [illegible] No. 24 [illegible] No. 25 [illegible] No. 26 [illegible] No. 27 [illegible] No. 28 [illegible] No. 29 [illegible] No. 30 [illegible] No. 31 [illegible] No. 32 [illegible] No. 33 [illegible] No. 34 [illegible] No. 35 [illegible] No. 36 [illegible] No. 37 [illegible] No. 38 [illegible] No. 39 [illegible] No. 40 [illegible] No. 41 [illegible] No. 42 [illegible] No. 43 [illegible] No. 44 [illegible] No. 45 [illegible] No. 46 [illegible] No. 47 [illegible] No. 48 [illegible] No. 49 [illegible] No. 50 [illegible] No. 51 [illegible] No. 52 [illegible] No. 53 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[illegible] insight after he [illegible] No. [illegible] [illegible] the clearest [illegible] [illegible] No. [illegible] [illegible] No. [illegible] [illegible] No. [illegible] [illegible] [illegible]

[illegible] quite clear in [illegible] and the [illegible] hallucinatory [illegible] [illegible] including [illegible] given their [illegible] experiences [illegible] great [illegible] Some of the others experiences [illegible] usual hallucinations of delirium [illegible]

[illegible] This is by far the most interesting aspect [illegible] We [illegible] occurred with what after Wallenberg [illegible] We must take into account first [illegible] extremely small highly distinct [illegible] This is a factor which obtrudes [illegible] psychiatry, e.g. in the [illegible] influence [illegible] whether in peace or in war [illegible] The perils of the secret mount [illegible] which became smaller and [illegible] intensified when [illegible] These circumstances [illegible] extremely [illegible] and there no food nor [illegible] for rescue. Exhaustion [illegible] critical judgment [illegible] Suggestibility then [illegible] against [illegible] psychically [illegible] was inevitably [illegible] influence [illegible] from the centre were [illegible] fears and hopes small [illegible] in the course of delirium [illegible] Wallenberg stresses [illegible] Nansen [illegible] summed up [illegible] all in the delirium [illegible] Griffith [illegible] psychiatrist [illegible] under [illegible] inspiration the gift of [illegible] delusions [illegible] influence in the [illegible] This dependence [illegible] Mapel [illegible]

[illegible] The allurd disorder of changing [illegible] [illegible] Before discussing this here [illegible] [illegible] of collective experience [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

Wollenberg [illegible] the case of [illegible] had very little [illegible] with houses in the [illegible] but [illegible] Bonda [illegible] those seen [illegible] study [illegible] incubatants and [illegible] of a light [illegible] communions telepathy [illegible] In the [illegible] the subject [illegible] experiment [illegible] realized.

Bonhoeffer (1907) [illegible] very [illegible] in our sense. The prevailing mood was [illegible] depression [illegible] difficulty in thinking and a diminished desire to talk. He [illegible] few days the majority of those with exhaustion symptoms [illegible] further require a longer time. Such complaints of restless sleep [illegible] Hypnotic in concentration and an increased irritability towards noises. They included recording in hour a certain number who [illegible] disturbance before but the majority had a psychopathic [illegible] In all he reminded a number of cases described here several [illegible] exhaustion given in my months later.

When we consider the literature [illegible] we find [illegible] (1) there is a long and far range [illegible] (2) with psychic epidemic [illegible] sweep and range. A third [illegible] is psychical research but the idea [illegible] but [illegible] hypnosis. It is not proposed to discuss this [illegible] The problem of mental [illegible] the [illegible] French [illegible] (1866), Wyndham (1889), Schrenck (1894), Schrenck (1901), [illegible] (1904) in Germany published [illegible] works mentioned. The subject appears [illegible] recent years. The [illegible] concerning the interesting phenomena. The [illegible] of different [illegible] among the [illegible] generally [illegible] by far the large majority [illegible] All authors [illegible] the secret [illegible] psychopathic [illegible] acquired [illegible] & (Wollenberg). Rubel (1904) [illegible] psychogenic dispositions [illegible] concerned [illegible] from the outer world [illegible] He considers that such psychoses [illegible] psychoses with [illegible] psychoses. He [illegible] has not been proved. The [illegible] of the [illegible] of the [illegible]

[illegible] Dancers of the Middle Age [illegible] which is popularly believed [illegible] This epidemic began most probably [illegible] St. Vitus Dance in 1374 spread [illegible] over two hundred years [illegible] sixteenth century (Hecker 1844). [illegible] people. Witkinski (1894) [illegible] all by long and affected [illegible] particular stress in [illegible] contributed by the [illegible] of society. The Middle Age [illegible] demons. They have number [illegible] Achbrown (1862) [illegible] Ellerfield explanation [illegible] religious epidemic [illegible] in which [illegible] such the [illegible] Jubilee [illegible] and [illegible] in 1898 [illegible] in Russia [illegible] leadership of [illegible] by [illegible] the whole of Belgium [illegible] the [illegible] of the Virgin [illegible] would probably [illegible] the [illegible] of a hysteric [illegible] some similar [illegible] and large [illegible] were also noted [illegible] some of which [illegible] by similar occurring in [illegible] Middle [illegible] Golden Age large number [illegible] are reported by Schneider [illegible] by illusion [illegible] one of which [illegible] first shipwrecked [illegible] consider psychic contagion [illegible] in this case [illegible] and of the spirit [illegible] with gradually [illegible] and [illegible] and [illegible] the [illegible] the [illegible] and [illegible]

formation [illegible] is involved. The [illegible] suggestibility [illegible] needs no mention [illegible] would then [illegible] hear of the [illegible] deceptions in [illegible]. Whilst in the [illegible] a psychopathic [illegible] quite numerous [illegible] in all the [illegible] As already [illegible] this [illegible] in all [illegible] In conclusion [illegible] man.

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Clinical Notes and Cases.

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[illegible]

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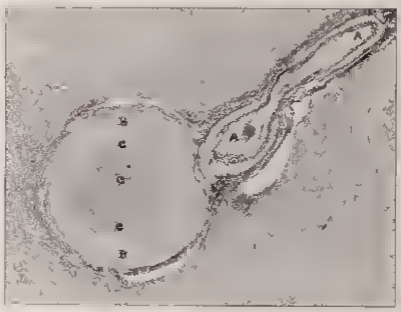

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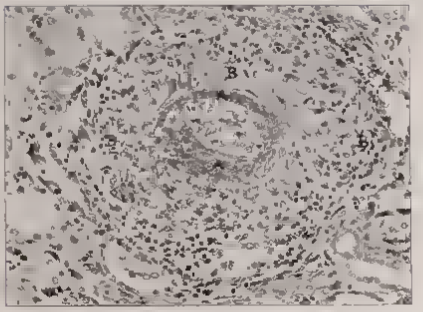
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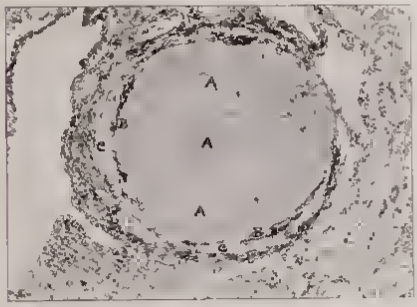
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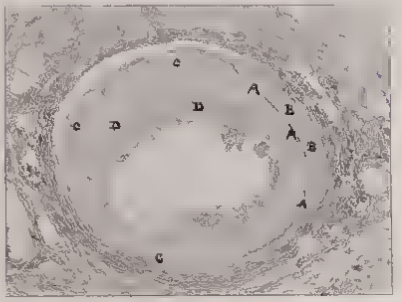
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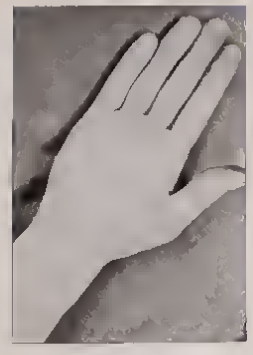

Case 1

Case 2

[illegible]

[illegible]

[illegible]

[illegible]

Fig. 1

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

(2) [illegible] 118 mm 2.9 mg. per 100
B[illegible] 4.2 [illegible] twenty [illegible] hour
B[illegible] 13.0 mg. per 100
[illegible]

Fig. 1

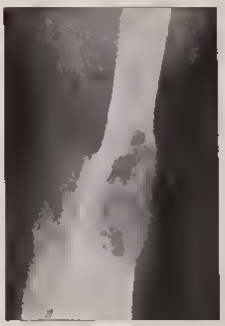

Fig. [illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

A CASE OF MENSTRUAL INFLUENZA

BY [illegible] THOMPSON SEYMOUR TAYLOR, [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Reviews.

[illegible] 1942. [illegible] 4s.

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News of the Service

HONOURS

D S C

[illegible] Lewis MB R S [illegible] R N
[illegible] R N V R D R S [illegible] MD R N V
[illegible] R N V R D R S Hyall MB [illegible]
[illegible] W Bola MB [illegible] W R MB Hall R N A Griffin [illegible]
[illegible] Jeffery MB [illegible] R D Robinson MB R S [illegible]

O B E

[illegible] G Ross MB R S [illegible] R C [illegible] R N V R

M B E

[illegible] R N V R [illegible] E Wind MB R [illegible]
MB MB R S [illegible] and P W [illegible] MB R Ch MB C S [illegible]

Mentioned in Despatches

[illegible] W E Lauriles MB R N V R
[illegible] Surgeon Lt-Commander R N V R [illegible] R Hughes MB R S [illegible]
MB R [illegible] R N V R [illegible] W [illegible] Knowles MB C S [illegible] W R D [illegible]
V R R [illegible]
[illegible] Surgeon Commander D W [illegible] McIldowney L D S R N V R
[illegible] Surgeon Lt-Commander B W Davy MB MB R S [illegible]
R N V R

George Medal

[illegible] Lieutenant-Commander R M Brunton MB C D R N [illegible]
[illegible] Anna [illegible] Inc

Bar to Distinguished Conduct Medal

[illegible] Lieutenant-Commander J T Mace MB B S R N V R [illegible]
[illegible] by King [illegible] the Hellenic

[illegible] Thomas [illegible] with bullion and [illegible] Jonesway [illegible]

A R R C

[illegible] Nursing Sister Miss M [illegible] Holly Mitchell

RETIREMENTS &c

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[illegible] and Aug 31 [illegible]
[illegible] MRCS LRCP [illegible]
[illegible] Shell Stores [illegible]
[illegible] and R [illegible] Lauder MRCS [illegible] with [illegible]
[illegible] Shell Service [illegible]
[illegible] 1942
[illegible] Commander [illegible] A G K [illegible] DS [illegible]
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[illegible] Mount [illegible]
[illegible] A [illegible] DS transferred to [illegible]
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PROMOTIONS

[illegible] *RN* MB [illegible] Surgeon Rear-Admiral
[illegible]
[illegible] E Dominey LRCP & [illegible] Commander MB
[illegible] MRCS [illegible] W Scott *RN* [illegible]
[illegible] MRCS [illegible] Surgeon Lieutenant-Commander
[illegible] W Long MRCS [illegible]
[illegible] MRCS [illegible] Surgeon Lieutenant
[illegible] W Lindsell MRCS [illegible] Surgeon Lieutenant
[illegible]

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[illegible] Lieutenants P. O'Brien, M.B., B.Ch., W. [illegible] R. W. Dixon, M.B., B.Ch., J. Robertson, M.B., C.B., [illegible] M.R.I.S., L.R.I.P., and E. P. Mylo, M.B., [illegible]

WARDMASTERS

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Temporary Warrant Wardmaster W. B. Smith-Gostick, [illegible] W. [illegible] 1942.

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F. [illegible] S.B.C.D. (Hons.) (Oxon.), M.D.S., [illegible] Warrant Wardmaster, September 30, 1942.

C. F. [illegible], M.B., L.D.S., L.M.S.S.A., [illegible] Supernumerary, [illegible] 1941.

ROYAL NAVAL VOLUNTEER RESERVE

RETIREMENTS AND RESIGNATIONS

Surgeon Lieutenant H. M. Petty, M.B., C.B.E., placed on the [illegible] Supernumerary List under R.N.R. Regulation 7(R.N.V.R.), [illegible] 1942.

[illegible] Acting Surgeon Lieutenant (Commander) D. D. [illegible] M.D., [illegible] 1942.

[illegible] Lieutenant L. J. Mann, M.B., [illegible] Temporary Surgeon Lieutenant R. G. Thomas, B.M., M.B.B.S., [illegible] Temporary Surgeon Lieutenant A. E. Hudson, M.B., [illegible] Temporary Surgeon Lieutenant G. W. Oliver, B.M., B.Ch., [illegible] 1942.

[illegible] Lieutenant L. Lamm, L.R.I.B.A., [illegible] 1942.

[illegible] Lieutenant A. Ashton, M.B., B.S., [illegible] Lieutenant A. M. Hardie, M.B., [illegible] Lieutenant A. M. Hardie, M.B., [illegible] Lieutenant [illegible] Lieutenant D. H. V. [illegible] Lieutenant [illegible] Lieutenant [illegible] Lieutenant

[illegible]

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

APPOINTMENTS

[illegible]

PROMOTION

[illegible]

RETIREMENT

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